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VMIN 243.69 Volts Minimum DC Input Voltage VMAX 374.77 Volts Maximum DC Input Voltage VMAX 374.77 Volts Maximum DC Input Voltage CURRENT WAVEFORM SHAPE PARAMETERS Image: Comparison of the state of the st	NS			3		Number of Secondary Turns
VMIN 243.69 Volts Minimum DC Input Voltage VMAX 374.77 Volts Maximum DC Input Voltage VMAX 374.77 Volts Maximum DC Input Voltage CURRENT WAVEFORM SHAPE PARAMETERS Image: Constraint of the second sec						
VMAX 374.77 Volts Maximum DC Input Voltage CURRENT WAVEFORM SHAPE PARAMETERS Image: Current waveform of the second				0.40.55		
CURRENT WAVEFORM SHAPE PARAMETERS 0.34 Duty Ratio at full load, minimum primary inductance and minimum input voltage						
DMAX 0.34 0.34 Duty Ratio at full load, minimum primary inductance and minimum input voltage	VMAX			374.77	Volts	Maximum DC Input Voltage
DMAX 0.34 0.34 Duty Ratio at full load, minimum primary inductance and minimum input voltage		ETEDS				
voltage		EIEKS				
IAVG 0.09 Amps Average Primary Current						voltage
IP 0.42 Amps Minimum Peak Primary Current						

IR			0.38	A	Primary Ripple Current
				Amps	
IRMS			0.17	Amps	Primary RMS Current
TRANSFORMER PRIMARY DESIGN PA	RAMETERS				
LP			1721	uHenries	Typical Primary Inductance. +/- 10% to ensure a minimum primary inductance
			1		of 1549 uH
LP TOLERANCE			10	%	Primary inductance tolerance
NP		<u> </u>	55		Primary Winding Number of Turns
ALG			561	nH/T^2	Gapped Core Effective Inductance
BM			2946	Gauss	Maximum Operating Flux Density, BM<3100 is recommended
BAC			1323	Gauss	AC Flux Density for Core Loss Curves (0.5 X Peak to Peak)
ur		-	1776	00033	Relative Permeability of Ungapped Core
LG		Warning	0.08	mm	III INCREASE GAP>>0.1. Increase NS, increase VOR, bigger Core
BWE		warning	46.8	mm	Effective Bobbin Width
OD	_		40.8 0.85		Maximum Primary Wire Diameter including insulation
				mm	
INS			0.08	mm	Estimated Total Insulation Thickness (= 2 * film thickness)
DIA			0.77	mm	Bare conductor diameter
AWG			21	AWG	Primary Wire Gauge (Rounded to next smaller standard AWG value)
СМ			813	Cmils	Bare conductor effective area in circular mils
СМА		Info	4667	Cmils/Amp	CAN DECREASE CMA < 500 (decrease L(primary layers), increase NS, use
					smaller Core)
TRANSFORMER SECONDARY DESIGN	PARAMETEE	S			
		-		+	
Lumped parameters			L	<u> </u>	
ISP			7.74	Amps	Peak Secondary Current
ISRMS			4.49	Amps	Secondary RMS Current
IRIPPLE			3.73	Amps	Output Capacitor RMS Ripple Current
CMS			897	Cmils	Secondary Bare Conductor minimum circular mils
AWGS			20	AWG	Secondary Wire Gauge (Rounded up to next larger standard AWG value)
VOLTAGE STRESS PARAMETERS					
VDRAIN			647	Volts	Maximum Drain Vallage Estimate (Accurace 200/ report clamp televance and
VDRAIN			047	Voits	Maximum Drain Voltage Estimate (Assumes 20% zener clamp tolerance and an additional 10% temperature tolerance)
PIVS		+	26	Volts	Output Rectifier Maximum Peak Inverse Voltage
F1V3			20	VUILS	
TRANSFORMER SECONDARY DESIGN	PARAMETER	RS (MULTI	PLE OUTPL	JTS)	
		T.		Т́	
1st output					
VO1	6.00		6.00	Volts	
IO1					Main Output Voltage (if unused, defaults to single output design)
5.0.1	1.80		1.80	Amps	Main Output Voltage (if unused, defaults to single output design) Output DC Current
PO1	1.80		1.80 10.80		
PO1 VD1	1.80			Amps	Output DC Current
	1.80		10.80	Amps Watts	Output DC Current Output Power
VD1	1.80		10.80 0.50	Amps Watts	Output DC Current Output Power Output Diode Forward Voltage Drop
VD1 NS1	1.80 		10.80 0.50 3.00	Amps Watts Volts	Output DC Current Output Power Output Diode Forward Voltage Drop Output Winding Number of Turns
VD1 NS1 ISRMS1	1.80		10.80 0.50 3.00 3.230	Amps Watts Volts Amps	Output DC Current Output Power Output Diode Forward Voltage Drop Output Winding Number of Turns Output Winding RMS Current
VD1 NS1 ISRMS1 IRIPPLE1	1.80		10.80 0.50 3.00 3.230 2.68	Amps Watts Volts Amps Amps	Output DC Current Output Power Output Diode Forward Voltage Drop Output Winding Number of Turns Output Winding RMS Current Output Capacitor RMS Ripple Current
VD1 NS1 ISRMS1 IRIPPLE1 PIVS1			10.80 0.50 3.00 3.230 2.68 26	Amps Watts Volts Amps Amps	Output DC Current Output Power Output Diode Forward Voltage Drop Output Winding Number of Turns Output Winding RMS Current Output Capacitor RMS Ripple Current Output Rectifier Maximum Peak Inverse Voltage
VD1 NS1 ISRMS1 IRIPPLE1 PIVS1 Recommended Diodes CMS1	1.80		10.80 0.50 3.00 3.230 2.68 26 SB520 646	Amps Watts Volts Amps Amps Volts Cmils	Output DC Current Output Power Output Diode Forward Voltage Drop Output Winding Number of Turns Output Winding RMS Current Output Capacitor RMS Ripple Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils
VD1 NS1 ISRMS1 IRIPPLE1 PIVS1 Recommended Diodes CMS1 AWGS1			10.80 0.50 3.00 2.68 26 SB520 646 22	Amps Watts Volts Amps Amps Volts Cmils AWG	Output DC Current Output Power Output Diode Forward Voltage Drop Output Winding Number of Turns Output Winding RMS Current Output Capacitor RMS Ripple Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value)
VD1 NS1 ISRMS1 IRIPPLE1 PIVS1 Recommended Diodes CMS1 AWGS1 DIAS1			10.80 0.50 3.00 2.68 26 SB520 646 22 0.65	Amps Watts Volts Amps Amps Volts Cmils AWG mm	Output DC Current Output Power Output Diode Forward Voltage Drop Output Winding Number of Turns Output Winding RMS Current Output Capacitor RMS Ripple Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value) Minimum Bare Conductor Diameter
VD1 NS1 ISRMS1 IRIPPLE1 PIVS1 Recommended Diodes CMS1 AWGS1			10.80 0.50 3.00 2.68 26 SB520 646 22	Amps Watts Volts Amps Amps Volts Cmils AWG	Output DC Current Output Power Output Diode Forward Voltage Drop Output Winding Number of Turns Output Winding RMS Current Output Capacitor RMS Ripple Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value)
VD1 NS1 ISRMS1 IRIPPLE1 PIVS1 Recommended Diodes CMS1 AWGS1 DIAS1			10.80 0.50 3.00 2.68 26 SB520 646 22 0.65	Amps Watts Volts Amps Amps Volts Cmils AWG mm	Output DC Current Output Power Output Diode Forward Voltage Drop Output Winding Number of Turns Output Winding RMS Current Output Capacitor RMS Ripple Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value) Minimum Bare Conductor Diameter
VD1 NS1 ISRMS1 IRIPPLE1 PIVS1 Recommended Diodes CMS1 AWGS1 DIAS1			10.80 0.50 3.00 2.68 26 SB520 646 22 0.65	Amps Watts Volts Amps Amps Volts Cmils AWG mm	Output DC Current Output Power Output Diode Forward Voltage Drop Output Winding Number of Turns Output Winding RMS Current Output Capacitor RMS Ripple Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value) Minimum Bare Conductor Diameter
VD1 NS1 ISRMS1 IRIPPLE1 PIVS1 Recommended Diodes CMS1 AWGS1 DIAS1			10.80 0.50 3.00 2.68 26 SB520 646 22 0.65	Amps Watts Volts Amps Amps Volts Cmils AWG mm	Output DC Current Output Power Output Diode Forward Voltage Drop Output Winding Number of Turns Output Winding RMS Current Output Capacitor RMS Ripple Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value) Minimum Bare Conductor Diameter
VD1 NS1 ISRMS1 IRIPPLE1 PIVS1 Recommended Diodes CMS1 AWGS1 DIAS1 ODS1	1.80		10.80 0.50 3.00 2.68 26 SB520 646 22 0.65	Amps Watts Volts Amps Amps Volts Cmils AWG mm	Output DC Current Output Power Output Diode Forward Voltage Drop Output Winding Number of Turns Output Winding RMS Current Output Capacitor RMS Ripple Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value) Minimum Bare Conductor Diameter Maximum Outside Diameter for Triple Insulated Wire
VD1 NS1 ISRMS1 IRIPPLE1 PIVS1 Recommended Diodes CMS1 AWGS1 DIAS1 ODS1 2nd output	20.00		10.80 0.50 3.00 2.68 26 SB520 646 22 0.65	Amps Watts Volts Amps Amps Volts Cmils AWG mm mm Mm	Output DC Current Output Power Output Diode Forward Voltage Drop Output Winding Number of Turns Output Winding RMS Current Output Capacitor RMS Ripple Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value) Minimum Bare Conductor Diameter Maximum Outside Diameter for Triple Insulated Wire Output Voltage
VD1 NS1 ISRMS1 IRIPPLE1 PIVS1 Recommended Diodes CMS1 AWGS1 DIAS1 ODS1 2nd output VO2 IO2			10.80 0.50 3.00 3.230 2.68 26 SB520 646 22 0.65 5.20 	Amps Watts Volts Amps Amps Volts Cmils AWG mm mm mm Volts Volts Volts Amps	Output DC Current Output Power Output Diode Forward Voltage Drop Output Winding Number of Turns Output Winding RMS Current Output Capacitor RMS Ripple Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value) Minimum Bare Conductor Diameter Maximum Outside Diameter for Triple Insulated Wire Output Voltage Output Voltage
VD1 NS1 ISRMS1 IRIPPLE1 PIVS1 Recommended Diodes CMS1 AWGS1 DIAS1 ODS1 2nd output VO2 IO2 PO2	20.00		10.80 0.50 3.00 3.230 2.68 26 SB520 646 22 0.65 5.20 4.00	Amps Watts Volts Amps Amps Volts Cmils AWG mm mm mm Volts Volts Volts Amps Watts	Output DC Current Output Power Output Diode Forward Voltage Drop Output Winding Number of Turns Output Winding RMS Current Output Capacitor RMS Ripple Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value) Minimum Bare Conductor Diameter Maximum Outside Diameter for Triple Insulated Wire Output Voltage Output Voltage Output Power
VD1 NS1 ISRMS1 IRIPPLE1 PIVS1 Recommended Diodes CMS1 AWGS1 DIAS1 ODS1 V02 IO2 PO2 VD2	20.00		10.80 0.50 3.00 3.230 2.68 26 SB520 646 22 0.65 5.20 	Amps Watts Volts Amps Amps Volts Cmils AWG mm mm mm Volts Volts Volts Amps	Output DC Current Output Power Output Diode Forward Voltage Drop Output Winding Number of Turns Output Winding RMS Current Output Capacitor RMS Ripple Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value) Minimum Bare Conductor Diameter Maximum Outside Diameter for Triple Insulated Wire Output Voltage Output DC Current Output Power Output Diode Forward Voltage Drop
VD1 NS1 ISRMS1 IRIPPLE1 PIVS1 Recommended Diodes CMS1 AWGS1 DIAS1 ODS1 2nd output VO2 IO2 PO2 VD2 NS2	20.00		10.80 0.50 3.00 3.230 2.68 26 SB520 646 22 0.65 5.20 4.00 0.70 9.55	Amps Watts Volts Amps Amps Volts Cmils AWG mm mm mm Volts AWG Mm WG Mm WG WM MM Volts Volts	Output DC Current Output Power Output Diode Forward Voltage Drop Output Winding Number of Turns Output Winding RMS Current Output Capacitor RMS Ripple Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value) Minimum Bare Conductor Diameter Maximum Outside Diameter for Triple Insulated Wire Output Voltage Output DC Current Output Power Output Diode Forward Voltage Drop Output Winding Number of Turns
VD1 NS1 ISRMS1 IRIPPLE1 PIVS1 Recommended Diodes CMS1 AWGS1 DIAS1 ODS1 2nd output VO2 IO2 PO2 VD2 NS2 ISRMS2	20.00		10.80 0.50 3.00 3.230 2.68 26 SB520 646 22 0.65 5.20 4.00 0.70 9.55 0.359	Amps Watts Volts Amps Amps Volts Cmils AWG mm mm mm Volts AWG Watts Volts Amps Volts	Output DC Current Output Power Output Diode Forward Voltage Drop Output Winding Number of Turns Output Winding RMS Current Output Capacitor RMS Ripple Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value) Minimum Bare Conductor Diameter Maximum Outside Diameter for Triple Insulated Wire Output Voltage Output DC Current Output Power Output Diode Forward Voltage Drop Output Winding Number of Turns Output Winding RMS Current
VD1 NS1 ISRMS1 IRIPPLE1 PIVS1 Recommended Diodes CMS1 AWGS1 DIAS1 ODS1 VO2 IO2 PO2 VD2 NS2 ISRMS2 IRIPPLE2	20.00		10.80 0.50 3.00 3.230 2.68 26 SB520 646 22 0.65 5.20 4.00 0.70 9.55 0.359 0.30	Amps Watts Volts Amps Amps Volts Cmils AWG mm mm mm Mm Volts Amps Volts Amps Amps Amps	Output DC Current Output Power Output Diode Forward Voltage Drop Output Winding Number of Turns Output Winding RMS Current Output Capacitor RMS Ripple Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value) Minimum Bare Conductor Diameter Maximum Outside Diameter for Triple Insulated Wire Output Voltage Output DC Current Output Power Output Diode Forward Voltage Drop Output Winding Number of Turns Output Winding RMS Current Output Winding RMS Current Output Winding RMS Current
VD1 NS1 ISRMS1 IRIPPLE1 PIVS1 Recommended Diodes CMS1 AWGS1 DIAS1 ODS1 VO2 IO2 PO2 VD2 NS2 ISRMS2 IRIPPLE2 PIVS2	20.00		10.80 0.50 3.00 3.230 2.68 26 SB520 646 22 0.65 5.20 4.00 0.70 9.55 0.359 0.30 85	Amps Watts Volts Amps Amps Volts Cmils AWG mm mm mm Mm Volts Amps Volts Volts Amps Volts Amps Volts Amps Volts	Output DC Current Output Power Output Diode Forward Voltage Drop Output Winding Number of Turns Output Winding RMS Current Output Capacitor RMS Ripple Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value) Minimum Bare Conductor Diameter Maximum Outside Diameter for Triple Insulated Wire Output Voltage Output DC Current Output Power Output Diode Forward Voltage Drop Output Winding Number of Turns Output Winding RMS Current Output Winding RMS Ripple Current
VD1 NS1 ISRMS1 IRIPPLE1 PIVS1 Recommended Diodes CMS1 AWGS1 DIAS1 ODS1 2nd output VO2 IO2 PO2 VD2 NS2 ISRMS2 IRIPPLE2 PIVS2 Recommended Diode	20.00		10.80 0.50 3.00 3.230 2.68 26 SB520 646 22 0.65 5.20 4.00 0.70 9.55 0.359 0.30 85 1N5817, SB1	Amps Watts Volts Amps Amps Volts Cmils AWG mm mm mm Mm Volts Amps Volts Amps Volts Amps Volts Amps Volts	Output DC Current Output Power Output Diode Forward Voltage Drop Output Winding Number of Turns Output Winding RMS Current Output Capacitor RMS Ripple Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value) Minimum Bare Conductor Diameter Maximum Outside Diameter for Triple Insulated Wire Output Voltage Output DC Current Output DC Current Output Diode Forward Voltage Drop Output Winding Number of Turns Output Winding Number of Turns Output Winding RMS Current Output Winding RMS Current Output Winding RMS Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output
VD1 NS1 ISRMS1 IRIPPLE1 PIVS1 Recommended Diodes CMS1 AWGS1 DIAS1 ODS1 V02 IO2 PO2 VD2 NS2 ISRMS2 IRIPPLE2 PIVS2 Recommended Diode CMS2	20.00		10.80 0.50 3.00 3.230 2.68 26 SB520 646 22 0.65 5.20 4.00 0.70 9.55 0.359 0.30 85 1N5817, SB1 72	Amps Watts Volts Amps Amps Volts Cmils AWG mm mm mm Mm Volts Amps Volts Volts Amps Volts Amps Volts Z0 Cmils	Output DC Current Output Power Output Diode Forward Voltage Drop Output Winding Number of Turns Output Winding RMS Current Output Capacitor RMS Ripple Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value) Minimum Bare Conductor Diameter Maximum Outside Diameter for Triple Insulated Wire Output Voltage Output Voltage Output DC Current Output Voltage Output Winding Number of Turns Output Winding Number of Turns Output Winding RMS Current Output Winding RMS Current Output Winding RMS Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding RMS Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils
VD1 NS1 ISRMS1 IRIPPLE1 PIVS1 Recommended Diodes CMS1 AWGS1 DIAS1 ODS1 2nd output VO2 IO2 VO2 IO2 VD2 NS2 ISRMS2 IRIPPLE2 PIVS2 Recommended Diode CMS2 AWGS2	20.00		10.80 0.50 3.00 3.230 2.68 26 SB520 646 22 0.65 5.20 4.00 0.70 9.55 0.359 0.30 85 1N5817, SB1 72 31	Amps Watts Volts Amps Amps Volts Cmils AWG mm mm mm mm Volts Amps Volts Amps Volts Amps Volts Amps Volts Z0 Cmils AWG	Output DC Current Output Power Output Uinding Number of Turns Output Winding RMS Current Output Capacitor RMS Ripple Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value) Minimum Bare Conductor Diameter Maximum Outside Diameter for Triple Insulated Wire Output Voltage Output Voltage Output Voltage Output Voltage Output Voltage Output Voltage Output Winding Number of Turns Output Voltage Output Voltage Output Voltage Output Winding Number of Turns Output Winding RMS Current Output Winding RMS Current Output Winding RMS Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value)
VD1 NS1 ISRMS1 IRIPPLE1 PIVS1 Recommended Diodes CMS1 AWGS1 DIAS1 ODS1 2nd output VO2 IO2 PO2 VD2 NS2 ISRMS2 ISRMS2 IRIPPLE2 PIVS2 Recommended Diode CMS2 AWGS2 DIAS2	20.00		10.80 0.50 3.00 3.230 2.68 26 SB520 646 22 0.65 5.20 4.00 0.70 9.55 0.359 0.30 85 1N5817, SB1 72 31 0.23	Amps Watts Volts Amps Amps Volts Cmils AWG mm mm mm Mm Volts Amps Volts Volts Amps Volts Amps Volts Z0 Cmils	Output DC Current Output Power Output Uinding Number of Turns Output Winding RMS Current Output Capacitor RMS Ripple Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value) Minimum Bare Conductor Diameter Maximum Outside Diameter for Triple Insulated Wire Output Voltage Output Winding Number of Turns Output Winding RMS Current Output Winding RMS Current Output Winding RMS Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value) Minimum Bare Conductor Diameter
VD1 NS1 ISRMS1 IRIPPLE1 PIVS1 Recommended Diodes CMS1 AWGS1 DIAS1 ODS1 2nd output VO2 IO2 VO2 IO2 VD2 NS2 ISRMS2 IRIPPLE2 PIVS2 Recommended Diode CMS2 AWGS2	20.00		10.80 0.50 3.00 3.230 2.68 26 SB520 646 22 0.65 5.20 4.00 0.70 9.55 0.359 0.30 85 1N5817, SB1 72 31	Amps Watts Volts Amps Amps Volts Cmils AWG mm mm mm mm Volts Amps Volts Amps Volts Amps Volts Amps Volts Z0 Cmils AWG	Output DC Current Output Power Output Uinding Number of Turns Output Winding RMS Current Output Capacitor RMS Ripple Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value) Minimum Bare Conductor Diameter Maximum Outside Diameter for Triple Insulated Wire Output Voltage Output DC Current Output Voltage Output Voltage Output Voltage Output Winding Number of Turns Output Winding Number of Turns Output Winding Number of Turns Output Winding RMS Current Output Winding RMS Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding RMS Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value)
VD1 NS1 ISRMS1 IRIPPLE1 PIVS1 Recommended Diodes CMS1 AWGS1 DIAS1 ODS1 2nd output VO2 IO2 PO2 VD2 NS2 ISRMS2 ISRMS2 IRIPPLE2 PIVS2 Recommended Diode CMS2 AWGS2 DIAS2	20.00		10.80 0.50 3.00 3.230 2.68 26 SB520 646 22 0.65 5.20 4.00 0.70 9.55 0.359 0.30 85 1N5817, SB1 72 31 0.23	Amps Watts Volts Amps Amps Volts Cmils AWG mm mm mm Volts Amps Volts Volts Amps Volts Amps Volts Z0 Cmils AWG mm	Output DC Current Output Power Output Uinding Number of Turns Output Winding RMS Current Output Capacitor RMS Ripple Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value) Minimum Bare Conductor Diameter Maximum Outside Diameter for Triple Insulated Wire Output Voltage Output Winding Number of Turns Output Winding RMS Current Output Winding RMS Current Output Winding RMS Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value) Minimum Bare Conductor Diameter
VD1 NS1 ISRMS1 IRIPPLE1 PIVS1 Recommended Diodes CMS1 AWGS1 DIAS1 ODS1 2nd output VO2 IO2 PO2 VD2 NS2 ISRMS2 ISRMS2 IRIPPLE2 PIVS2 Recommended Diode CMS2 AWGS2 DIAS2	20.00		10.80 0.50 3.00 3.230 2.68 26 SB520 646 22 0.65 5.20 4.00 0.70 9.55 0.359 0.30 85 1N5817, SB1 72 31 0.23	Amps Watts Volts Amps Amps Volts Cmils AWG mm mm mm Volts Amps Volts Volts Amps Volts Amps Volts Z0 Cmils AWG mm	Output DC Current Output Power Output Uinding Number of Turns Output Winding RMS Current Output Capacitor RMS Ripple Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value) Minimum Bare Conductor Diameter Maximum Outside Diameter for Triple Insulated Wire Output Voltage Output Winding Number of Turns Output Winding RMS Current Output Winding RMS Current Output Winding RMS Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value) Minimum Bare Conductor Diameter
VD1 NS1 ISRMS1 IRIPPLE1 PIVS1 Recommended Diodes CMS1 AWGS1 DIAS1 ODS1 2nd output VO2 IO2 PO2 VD2 NS2 ISRMS2 IRIPPLE2 PIVS2 Recommended Diode CMS2 AWGS2 DIAS2	20.00		10.80 0.50 3.00 3.230 2.68 26 SB520 646 22 0.65 5.20 4.00 0.70 9.55 0.359 0.30 85 1N5817, SB1 72 31 0.23	Amps Watts Volts Amps Amps Volts Cmils AWG mm mm mm Volts Amps Volts Volts Amps Volts Amps Volts Z0 Cmils AWG mm	Output DC Current Output Power Output Uinding Number of Turns Output Winding RMS Current Output Capacitor RMS Ripple Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value) Minimum Bare Conductor Diameter Maximum Outside Diameter for Triple Insulated Wire Output Voltage Output Winding Number of Turns Output Winding RMS Current Output Winding RMS Current Output Winding RMS Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value) Minimum Bare Conductor Diameter
VD1 NS1 ISRMS1 IRIPPLE1 PIVS1 Recommended Diodes CMS1 AWGS1 DIAS1 ODS1 V02 IO2 PO2 VD2 NS2 ISRMS2 IRIPPLE2 PIVS2 Recommended Diode CMS2 AWGS2 DIAS2	20.00		10.80 0.50 3.00 3.230 2.68 26 SB520 646 22 0.65 5.20 4.00 0.70 9.55 0.359 0.30 85 1N5817, SB1 72 31 0.23	Amps Watts Volts Amps Amps Volts Cmils AWG mm mm mm Volts Amps Volts Volts Amps Volts Amps Volts Z0 Cmils AWG mm	Output DC Current Output Power Output Uinding Number of Turns Output Winding RMS Current Output Capacitor RMS Ripple Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value) Minimum Bare Conductor Diameter Maximum Outside Diameter for Triple Insulated Wire Output Voltage Output Voltage Output Voltage Output Voltage Output Voltage Output Winding Number of Turns Output Voltage Output Voltage Output Voltage Output Winding Number of Turns Output Winding RMS Current Output Winding RMS Current Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Rectifier Maximum Peak Inverse Voltage Recommended Diodes for this output Output Winding Bare Conductor minimum circular mils Wire Gauge (Rounded up to next larger standard AWG value) Minimum Bare Conductor Diameter

VO3			Volts	Output Voltage	
IO3			Amps	Output DC Current	
PO3		0.00	Watts	Output Power	
VD3		0.70	Volts	Output Diode Forward Voltage Drop	
NS3		0.32		Output Winding Number of Turns	
ISRMS3		0.000	Amps	Output Winding RMS Current	
IRIPPLE3		0.00	Amps	Output Capacitor RMS Ripple Current	
PIVS3		2	Volts	Output Rectifier Maximum Peak Inverse Voltage	
Recommended Diode				Recommended Diodes for this output	
CMS3		0	Cmils	Output Winding Bare Conductor minimum circular mils	
AWGS3		N/A	AWG	Wire Gauge (Rounded up to next larger standard AWG value)	
DIAS3		N/A	mm	Minimum Bare Conductor Diameter	
ODS3		N/A	mm	Maximum Outside Diameter for Triple Insulated Wire	
Total power		 14.8	Watts	Total Output Power	
		14.0	Walls		
Negative Output	N/A	N/A		If negative output exists enter Output number; eg: If VO2 is negative output, enter 2	

Transformer Construction Parameters



Var	Value	Units	Description
Core Type	EF25		Core Type
Core Material	NC-2H (Nicera) or Equivalent		Core Material
Bobbin Reference	Generic, 4 pri. + 3 sec.		Bobbin Reference
Bobbin Orientation	Horizontal		Bobbin type
Primary Pins	4		Number of Primary pins used
Secondary Pins	3		Number of Secondary pins used
LP	1721	μH	Nominal Primary Inductance
ML	0.00	mm	Safety Margin on Left Width
MR	0.00	mm	Safety Margin on Right Width
LG	0.083	mm	Estimated Gap Length

Bias Variables

Var	Value	Units	Description
NB	11		Bias Winding Number of Turns
Wire Size	26	AWG	Wire size of Bias windings
Winding Type	Bifilar (x2)		Wire type of Bias windings
Layers	0.64		Bias Winding Layers
Start Pin(s)	4		Starting pin(s) for Bias winding
Termination Pin(s)	3		Termination pin(s) for Bias winding

Primary Winding Section 1

Var	Value	Units	Description
NP1	55		Rounded (Integer) Number of Primary winding turns in the first section of primary
Wire Size	26	AWG	Wire size of primary winding
Winding Type	Trifilar (x3)		Primary winding number of parallel wire strands
L	4.78		Primary Number of Layers
Start Pin(s)	2		Starting pin(s) for first section of primary winding
Termination Pin(s)	1		Termination pin(s) for first section of primary winding

Output 1

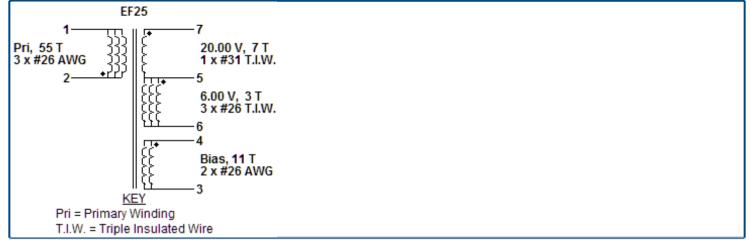
Var	Value	Units	Description
VO	6.00	V	Output Voltage
IO	1.80	A	Output Current
VOUT_ACTUAL	6.00	V	Actual Output Voltage
NS	3		Secondary Number of Turns
Wire Size	26	AWG	Wire size of secondary winding
Winding Type	Trifilar (x3)		Output winding number of parallel strands
L_S_OUT	0.35		Secondary Output Winding Layers
Start Pin(s)	5		Starting pin(s) for Output winding
Termination Pin(s)	6		Termination pin(s) for Output winding

Output 2

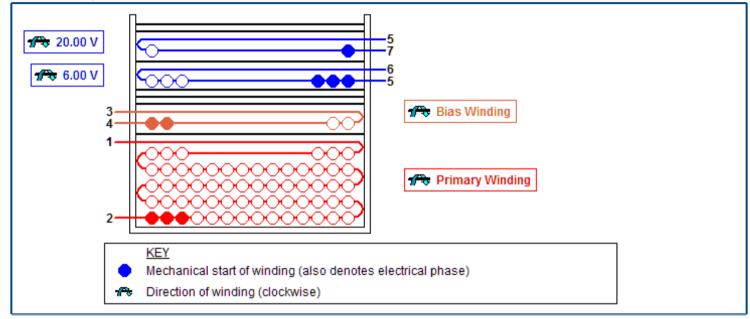
Var	Value	Units	Description
VO	20.00	V	Output Voltage
IO	0.20	A	Output Current
VOUT_ACTUAL	20.97	V	Actual Output Voltage
NS	7		Secondary Number of Turns
Wire Size	31	AWG	Wire size of secondary winding
Winding Type	Single (x1)		Output winding number of parallel strands
L_S_OUT	0.19		Secondary Output Winding Layers
Start Pin(s)	7		Starting pin(s) for Output winding
Termination Pin(s)	5		Termination pin(s) for Output winding

Electrical Diagram

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Mechanical Diagram



Winding Instruction

Primary Winding

Start on pin(s) 2 and wind 55 turns (x 3 filar) of item [5]. In 5 layer(s) from left to right. At the end of 1st layer, continue to wind the next layer from right to left. At the end of 2nd layer, continue to wind the next layer from left to right. Continue the same way as in previous 2 layers. On the final layer, spread the winding evenly across entire bobbin. Finish this winding on pin(s) 1. Add 1 layer of tape, item [3], for insulation. **Bias Winding** Start on pin(s) 4 and wind 11 turns (x 2 filar) of item [5]. Wind in same rotational direction as primary winding. Spread the winding evenly across entire bobbin. Finish this winding on pin(s) 3. Add 3 layers of tape, item [3], for insulation. **Secondary Winding** Start on pin(s) 5 and wind 3 turns (x 3 filar) of item [6]. Spread the winding evenly across entire bobbin. Wind in same rotational direction as primary winding. Finish this winding on pin(s) 6. Add 1 layer of tape, item [3], for insulation. Start on pin(s) 7 and wind 7 turns (x 1 filar) of item [7]. Spread the winding evenly across entire bobbin. Wind in same rotational direction as primary winding. Finish this winding on pin(s) 5. Add 1 layer of tape, item [3], for insulation. Start on pin(s) 7 and wind 7 turns (x 1 filar) of item [7]. Spread the winding evenly across entire bobbin. Wind in same rotational direction as primary winding. Finish this winding on pin(s) 5. Add 2 layers of tape, item [3], for insulation. **Core Assembly** Assemble and secure core halves. Item [1]. **Varnish**

Dip varnish uniformly in item [4]. Do not vacuum impregnate

Comments

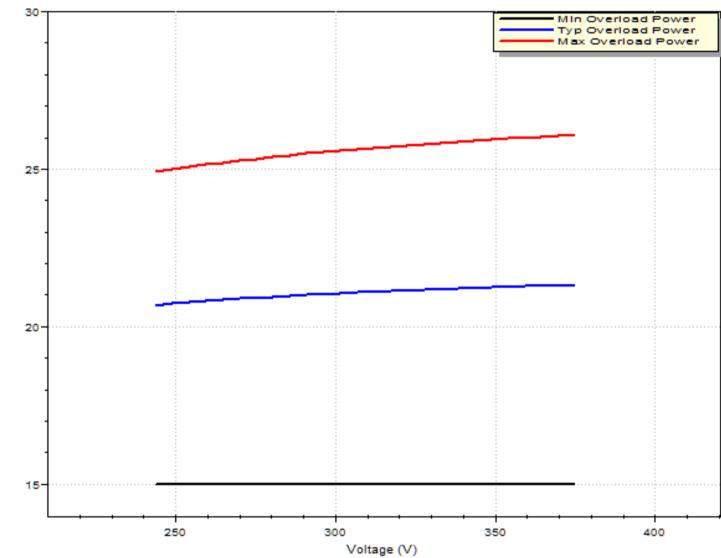
Materials

ltem	Description
[1]	Core: EF25, NC-2H (Nicera) or Equivalent, gapped for ALG of 561 nH/T ²
[2]	Bobbin: Generic, 4 pri. + 3 sec.
[3]	Barrier Tape: Polyester film [1 mil (25 μm) base thickness], 15.60 mm wide
[4]	Varnish
[5]	Magnet Wire: 26 AWG, Solderable Double Coated
[6]	Triple Insulated Wire: 26 AWG
[7]	Triple Insulated Wire: 31 AWG

Electrical Test Specifications						
Parameter	Condition	Spec				
Electrical Strength, VAC	60 Hz 1 second, from pins 1,2,3,4 to pins 5,6,7.	3000				
	Measured at 1 V pk-pk, typical switching frequency, between pin 1 to pin 2, with all other Windings open.	1721				
Tolerance, ±%	Tolerance of Primary Inductance	10.0				
Maximum Primary Leakage, µH	Measured between Pin 1 to Pin 2, with all other Windings shorted.	51.64				

Although the design of the software considered safety guidelines, it is the user's responsibility to ensure that the user's power supply design meets all applicable safety requirements of user's product.

The products and applications illustrated herein (including circuits external to the products and transformer construction) may be covered by one or more U.S. and foreign patents or potentially by pending U.S. and foreign patent applications assigned to Power Integrations. A complete list of Power Integrations' patents may be found at www.power.com.



Overload Power over line

Power (W)