

FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Working peak reverse voltage			
1N5802	V_{RWM}	50	V
1N5803		75	
1N5804		100	
1N5805		125	
1N5806		150	
Forward surge current ⁽¹⁾	I_{FSM}	35	A
Average rectified output current @ $T_L = 75^\circ\text{C}$ at 3/8" lead length ⁽²⁾	I_{O1}	2.5	A
Average rectified output current @ $T_A = 55^\circ\text{C}$ at 3/8" lead length ⁽³⁾	I_{O2}	1.0	A
Capacitance @ $V_R = 10\text{V}$, $f = 1\text{MHz}$, $V_{sig} = 50\text{mV(p-p)}$	C	25	pF
Reverse recovery time ⁽⁴⁾	t_{rr}	25	ns
Solder temperature @ 10 s	T_{SP}	260	$^\circ\text{C}$
Junction and storage temperature range	T_J, T_{stg}	-65 to +175	$^\circ\text{C}$
Thermal resistance junction to lead (L = 0.375")	$R_{\theta JL}$	36	$^\circ\text{C/W}$

Note 1: $T_A = 25^\circ\text{C}$ @ $I_O = 1.0\text{A}$ and V_{RWM} for 10 8.3ms surges at 1 minute intervals.

Note 2: I_{O1} is rated at 2.5A @ $T_L = 75^\circ\text{C}$ at 3/8" lead length. Derate at 25mA/ $^\circ\text{C}$ for T_L above 75 $^\circ\text{C}$.

Note 3: I_{O2} is rated at 1.0A @ $T_A = 55^\circ\text{C}$ for PC boards where thermal resistance from mounting point to ambient is sufficiently controlled ($R_{\theta JX} < 154^\circ\text{C/W}$) where $T_{J(max)}$ 175 $^\circ\text{C}$ is not exceeded.

Derate at 8.33mA/ $^\circ\text{C}$ for T_A above 55 $^\circ\text{C}$.

Note 4: $I_F = 0.5\text{A}$, $I_{RM} = 0.5\text{A}$, $I_{R(REC)} = 0.05\text{A}$.

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Part number	Minimum breakdown voltage @ 100 μA	Maximum forward voltage		Maximum reverse current @ V_{RWM}		Maximum surge current ⁽⁵⁾	Maximum reverse recovery time ⁽⁶⁾	Thermal impedance @ $t_h = 10\text{ms}$ ⁽⁷⁾
		V_{FM}		I_R				
		Volts		μA				
	$V_{(BR)}$	$I_F = 1.0\text{A}$	$I_F = 2.5\text{A}$	25 $^\circ\text{C}$	125 $^\circ\text{C}$	Amps	ns	$^\circ\text{C/W}$
1N5802	60	0.875	0.975	1	175	35	25	4.0
1N5803	85	0.875	0.975	1	175	35	25	4.0
1N5804	110	0.875	0.975	1	175	35	25	4.0
1N5805	135	0.875	0.975	1	175	35	25	4.0
1N5806	160	0.875	0.975	1	175	35	25	4.0

Note 5: $T_A = 25^\circ\text{C}$ @ $I_O = 1.0\text{A}$ and V_{RWM} for ten 8.3ms surges at 1 minute intervals.

Note 6: $I_F = 0.5\text{A}$, $I_{RM} = 0.5\text{A}$, $I_{R(REC)} = 0.05\text{A}$.

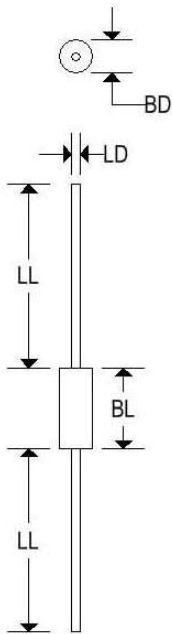
Note 7: See figure 1 for thermal impedance curve.

1N5802-1N5806

HIGH EFFICIENCY RECTIFIERS

MECHANICAL CHARACTERISTICS

Case	Digi A
Marking	Alpha Numeric
Polarity	Cathode Band



	Digi A			
	Inches		Millimeters	
	Min	Max	Min	Max
BD	-	0.095	-	2.413
BL	-	0.180	-	4.572
LD	0.028	0.032	0.711	0.813
LL	0.700	-	17.800	-

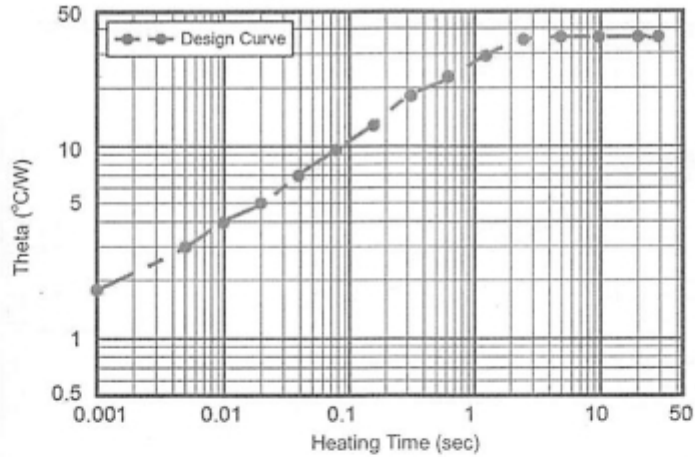


FIGURE 1
Maximum Thermal Impedance

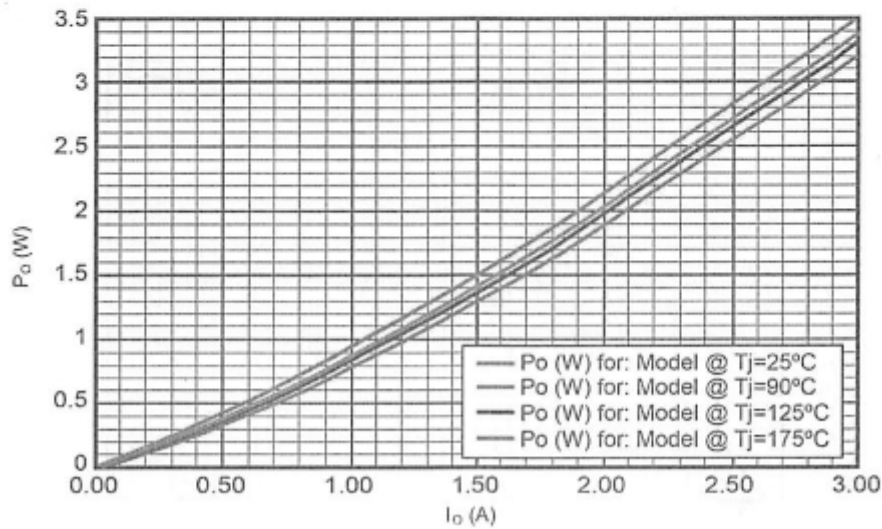


FIGURE 2
Rectifier Power vs I_O (Average Forward Current)

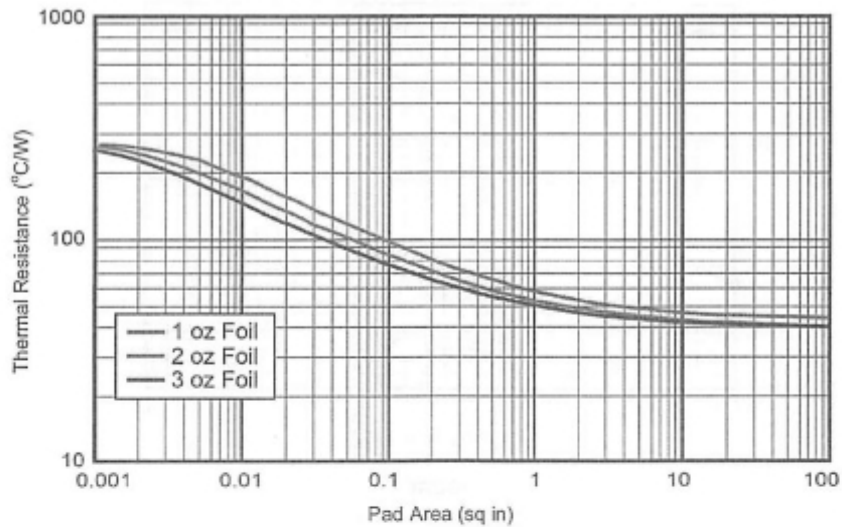


FIGURE 3
Thermal Resistance vs FR4 Pad Area At Ambient
PCB horizontal (for each pad) with 1, 2, and 3 oz copper

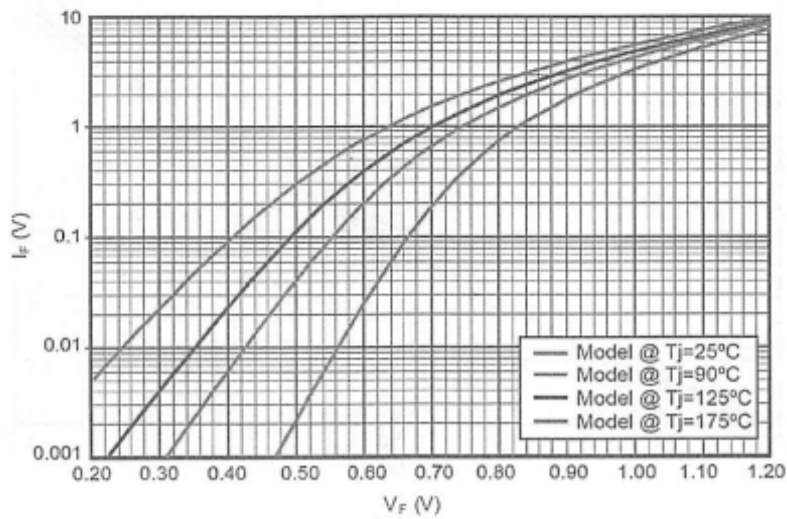


FIGURE 4
Forward Voltage vs Forward Current