

### 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
<b>Working peak reverse voltage</b>			
1N5802	$V_{RWM}$	50	V
1N5803		75	
1N5804		100	
1N5805		125	
1N5806		150	
<b>Forward surge current <sup>(1)</sup></b>	$I_{FSM}$	35	A
<b>Average rectified output current @ <math>T_L = 75^\circ\text{C}</math> at 3/8" lead length <sup>(2)</sup></b>	$I_{O1}$	2.5	A
<b>Average rectified output current @ <math>T_A = 55^\circ\text{C}</math> at 3/8" lead length <sup>(3)</sup></b>	$I_{O2}$	1.0	A
<b>Capacitance @ <math>V_R = 10\text{V}</math>, <math>f = 1\text{MHz}</math>, <math>V_{sig} = 50\text{mV(p-p)}</math></b>	C	25	pF
<b>Reverse recovery time <sup>(4)</sup></b>	$t_{rr}$	25	ns
<b>Solder temperature @ 10 s</b>	$T_{SP}$	260	$^\circ\text{C}$
<b>Junction and storage temperature range</b>	$T_J, T_{stg}$	-65 to +175	$^\circ\text{C}$
<b>Thermal resistance junction to lead (L = 0.375")</b>	$R_{\theta JL}$	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 $\mu\text{A}$	Maximum forward voltage		Maximum reverse current @ $V_{RWM}$		Maximum surge current <sup>(5)</sup>	Maximum reverse recovery time <sup>(6)</sup>	Thermal impedance @ $t_h = 10\text{ms}$ <sup>(7)</sup>
	$V_{(BR)}$	$V_{FM}$		$I_R$		$I_{FSM}$	$t_{rr}$	$Z_{\theta JX}$
	Volts	Volts		$\mu\text{A}$		Amps	ns	$^\circ\text{C/W}$
		$I_F = 1.0\text{A}$	$I_F = 2.5\text{A}$	25 $^\circ\text{C}$	125 $^\circ\text{C}$			
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:  $I_F = 0.5\text{A}$ ,  $I_{RM} = 0.5\text{A}$ ,  $I_{R(REC)} = 0.05\text{A}$ .

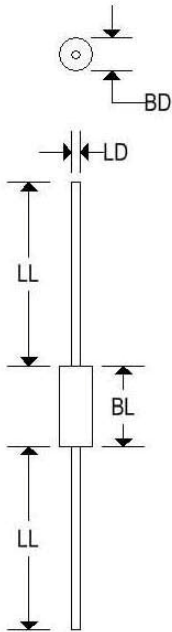
Note 7: See figure 1 for thermal impedance curve.

# 1N5802-1N5806

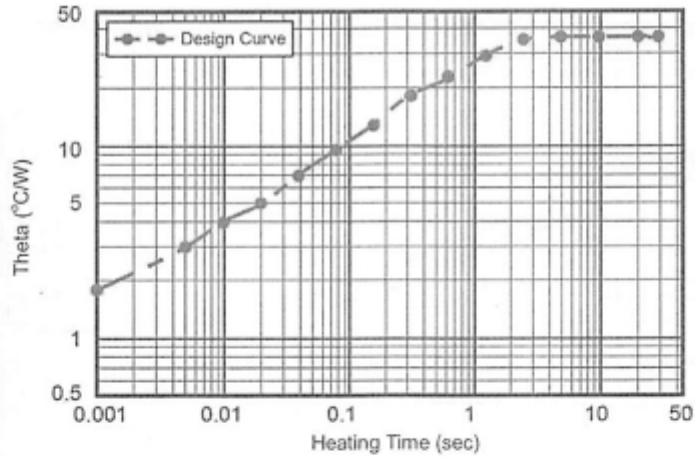
## HIGH EFFICIENCY RECTIFIERS

### MECHANICAL CHARACTERISTICS

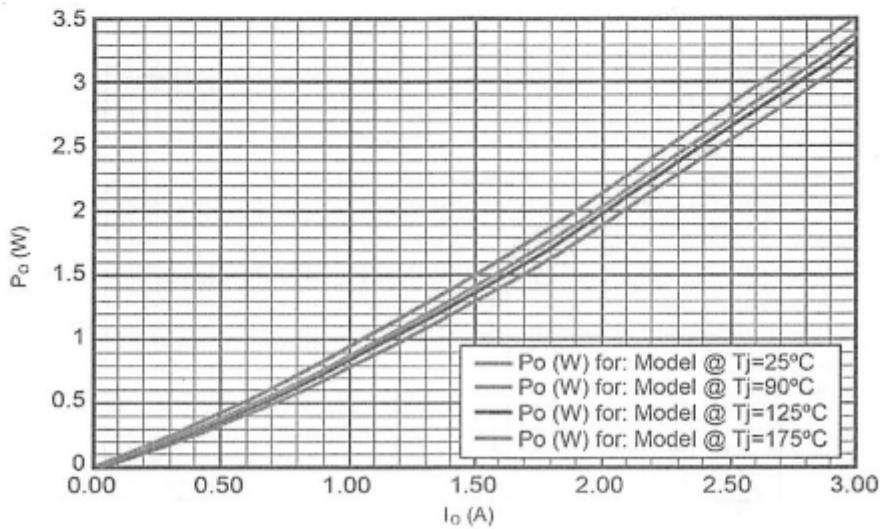
Case	Digi A
Marking	Alpha Numeric
Polarity	Cathode Band



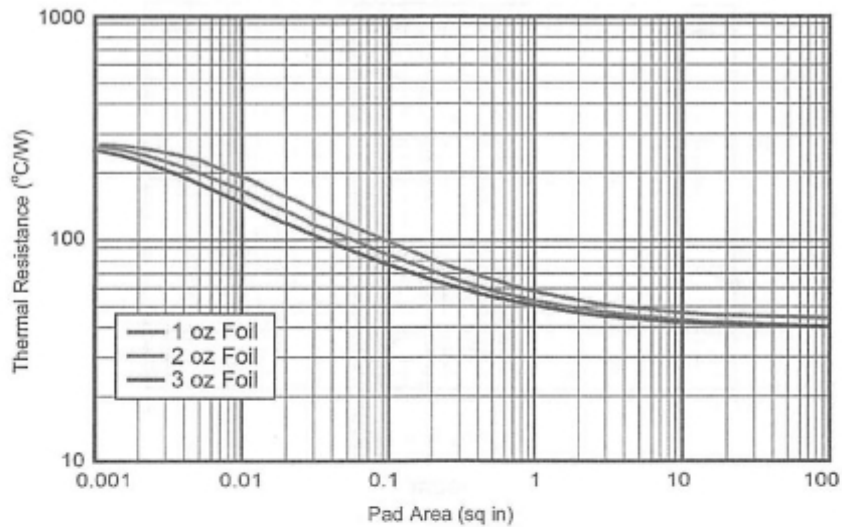
	Digi A			
	Inches		Millimeters	
	Min	Max	Min	Max
BD	-	0.095	-	2.413
BL	-	0.180	-	4.572
LD	0.028	0.032	0.711	0.813
LL	0.700	-	17.800	-



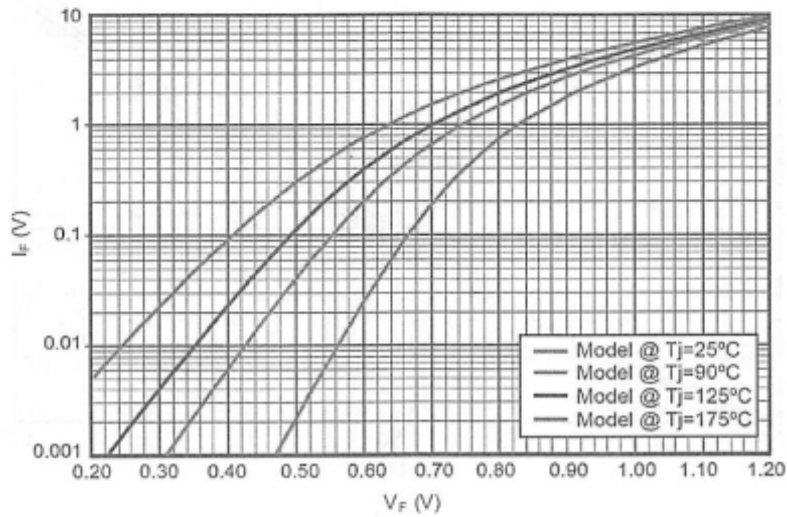
**FIGURE 1**  
Maximum Thermal Impedance



**FIGURE 2**  
Rectifier Power vs I<sub>O</sub> (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