

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			
1N5807	V_{RWM}	50	V
1N5808		75	
1N5809		100	
1N5810		125	
1N5811		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°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 ($R_{\theta JA} < 154^\circ\text{C/W}$) where $T_{J(max)}$ 175°C is not exceeded.

Derate at 8.33mA/ $^\circ\text{C}$ for T_A above 55°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⁾
	$V_{(BR)}$	V_{FM}		I_R		I_{FSM}	t_{rr}	$Z_{\theta JX}$
	Volts	Volts		μA		Amps	ns	$^\circ\text{C/W}$
		$I_F = 1.0\text{A}$	$I_F = 2.5\text{A}$	25 $^\circ\text{C}$	125 $^\circ\text{C}$			
1N5807	60	0.875	0.975	1	175	35	25	4.0
1N5808	85	0.875	0.975	1	175	35	25	4.0
1N5809	110	0.875	0.975	1	175	35	25	4.0
1N5810	135	0.875	0.975	1	175	35	25	4.0
1N5811	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: $I_F = 0.5\text{A}$, $I_{RM} = 0.5\text{A}$, $I_{R(REC)} = 0.05\text{A}$.

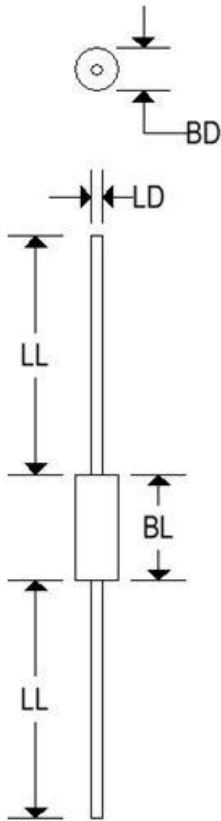
Note 7: See figure 1 for thermal impedance curve.

1N5807-1N5811

HIGH EFFICIENCY RECTIFIERS

MECHANICAL CHARACTERISTICS

Case	Digi B
Marking	Alpha Numeric
Polarity	Cathode Band



	Digi B			
	Inches		Millimeters	
	Min	Max	Min	Max
BD	0.115	0.142	2.921	3.607
BL	0.130	0.260	3.302	6.604
LD	0.036	0.042	0.914	1.067
LL	1.000	1.500	25.400	38.100

BL includes slugs and uncontrolled area of the leads

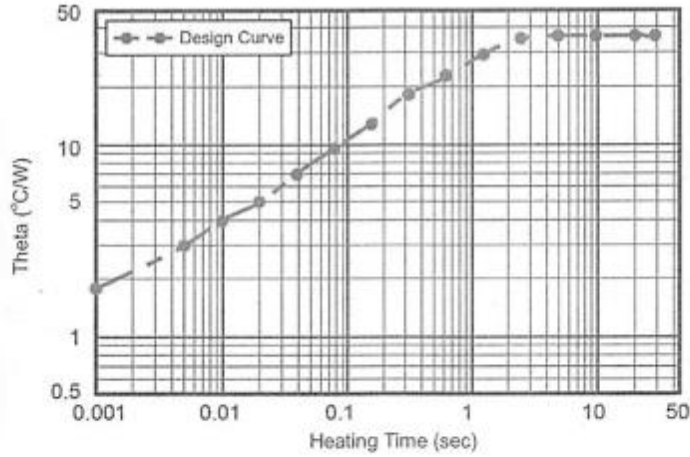


FIGURE 1
Maximum Thermal Impedance

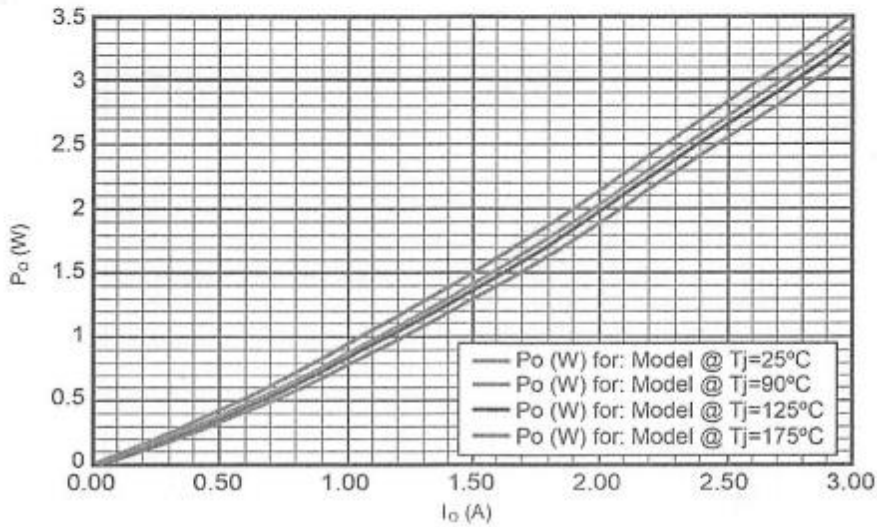


FIGURE 2
Rectifier Power vs I_O (Average Forward Current)

1N5807-1N5811

HIGH EFFICIENCY RECTIFIERS

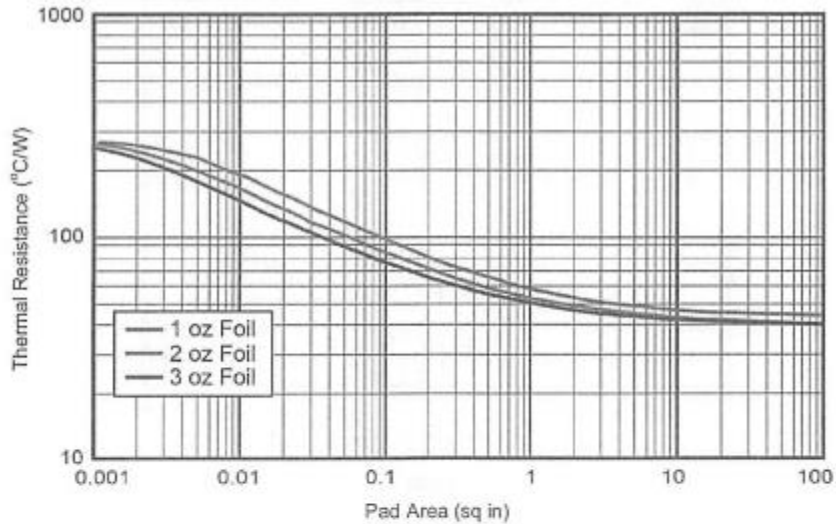


FIGURE 3
Thermal Resistance vs FR4 Pad Area At Ambient
PCB horizontal (for each pad) with 1, 2, and 3 oz copper

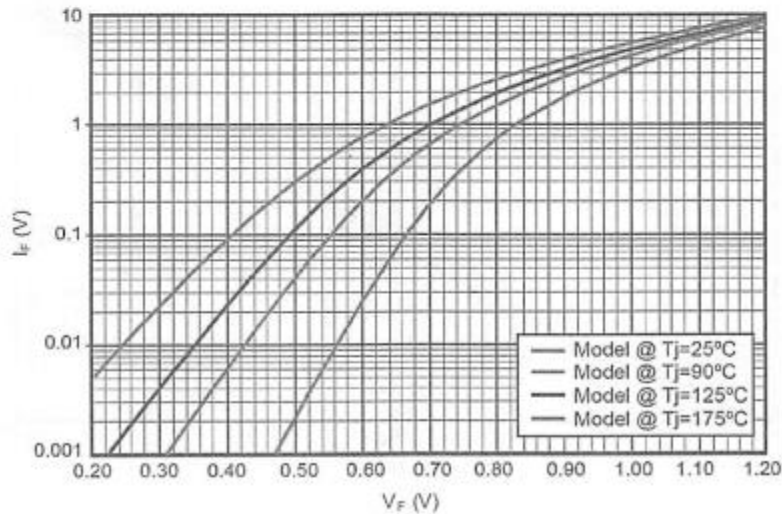


FIGURE 4
Forward Voltage vs Forward Current