P3L300F-A

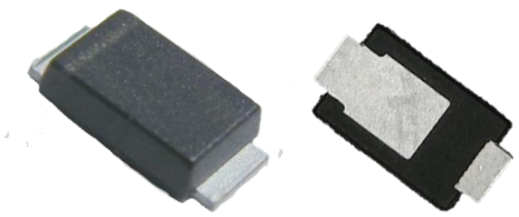
PFC Device Corporation

3A 300V MOS Schottky Rectifier

Major ratings and characteristics

Characteristics	Values	Units
$I_{F(AV)}$ Rectangular Waveform	3	A
V_{RRM}	300	V
V_F@ 3A , Tj=125 °C	0.79	V, typ.
T_J Operating Junction Temperature	-65 to +175	°C

P3L300F-A



SMAF-A

Features

- Low Forward Voltage Drop
- Reliable High Temperature Operation
- Softest, fast switching capability
- 175°C Operating Junction Temperature
- Lead Free Finish, RoHS Compliant
- Green Molding Compound (No Br, Sb)

Typical Applications

Device optimized for low forward voltage drop to maximize efficiency in Power Supply applications

1. Characteristics

Maximum Ratings Characteristics (T_A = 25 °C unless otherwise specified)

Parameter	Symbol	Values	Units
DC Blocking Voltage	V_{RM}	300	Volts
Working Peak Reverse Voltage	V_{RWM}		
Peak Repetitive Reverse Voltage	V_{RRM}		
Average Rectified Forward Current Per device (Rated VR-20Khz Square Wave) - 50% duty cycle	I_o	3	Amps
Peak Forward Surge Current - 1/2 60hz	I_{FSM}	50	Amps
Peak Repetitive Reverse Surge Current (2uS-1Khz)	I_{RRM}	0.5	Amps
Typical Thermal Resistance Thermal Resistance junction to Ambient Note (1)	$R\theta_{JL}$	30	°C / W
Maximum Rate of Voltage Change (at Rated VR)	dv/dt	10000	V/uS
Operating Junction Temperature	T_J	- 65 to +175	°C
Storage Junction Temperature	T_{STG}	- 65 to +175	

Electrical Characteristics - (per leg) (T_A = 25 °C unless otherwise specified)

Parameter	Test Conditions		Symbol	Typ.	Max.	Units
Instantaneous Forward Voltage	IF = 3 A	T_J = 25 °C	VF*	-----	0.92	Volts
		T_J = 125 °C		0.79	0.83	
Instantaneous Reverse Current	At V_{RM}	T_J = 25 °C	IR*	-----	100	uA
		T_J = 125 °C		-----	20	mA

* Pulse width < 300 uS, Duty cycle < 2%

Note 1. FR-4 PCB, 2 oz Copper. Minimum recommended pad layout

2. Characteristics Curves

Ratings and Characteristics Curves (TA = 25℃ unless otherwise specified)

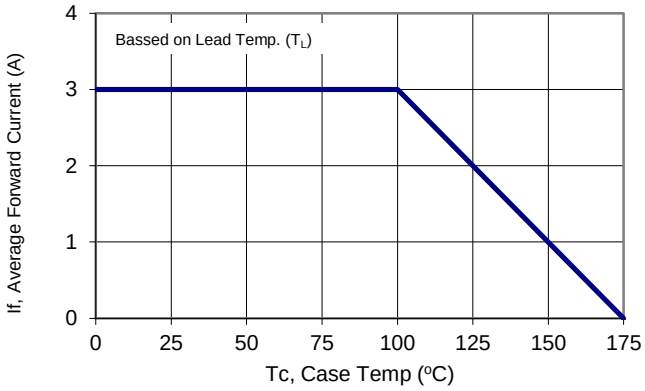


Figure 1: Current Derating, Case

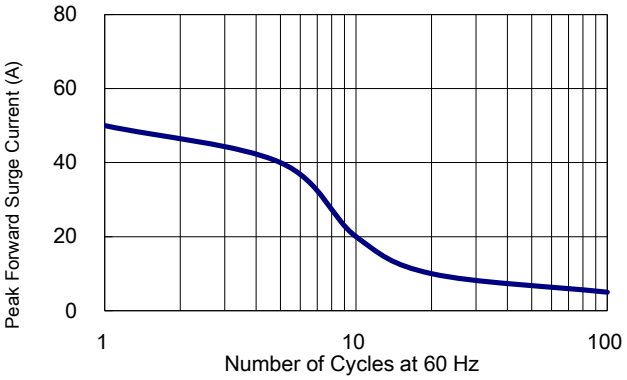


Figure 2: Maximum Repetitive Surge Current

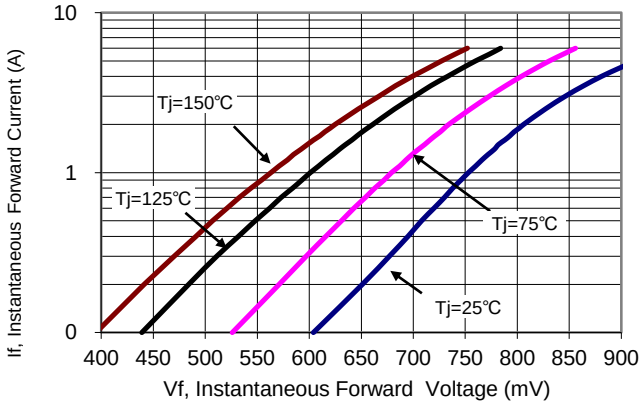


Figure 3: Typical Forward Voltage

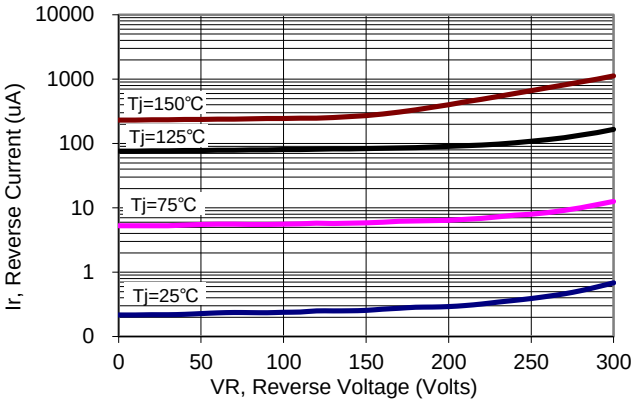


Figure 4: Typical Reverse Current

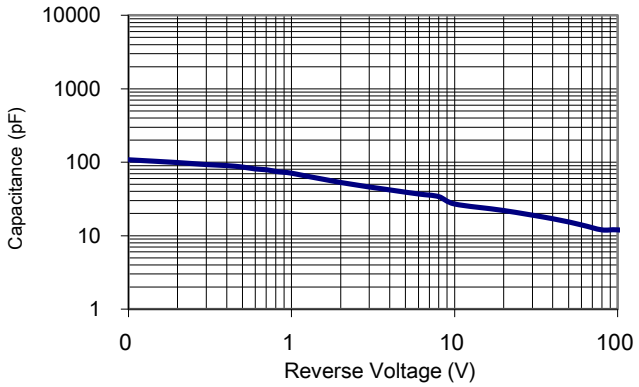


Figure 5: Typical Junction Capacitance

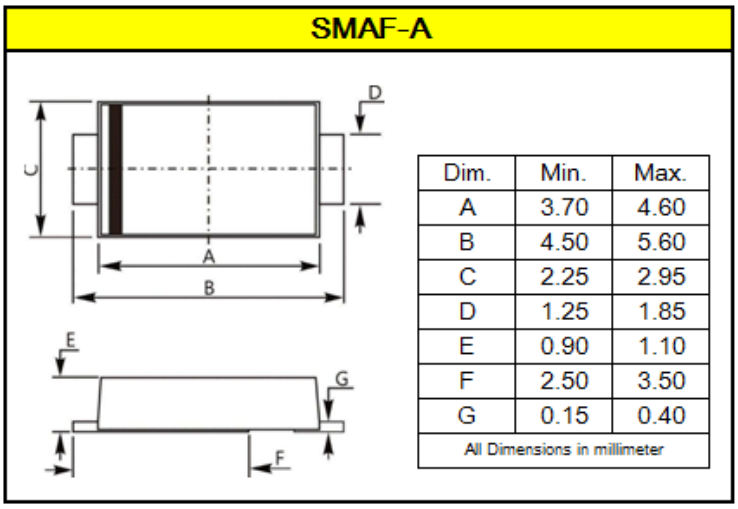
Marking information

Top Marking Rule

P3L300F = Product Type Marking Code
A = Assembly Code
YM = Date Code
Y = Last one digits of year
M = Month code

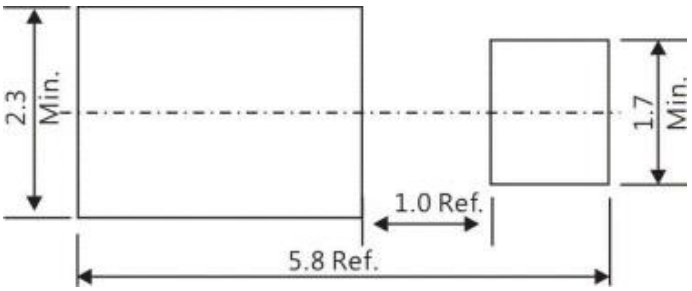
3. Package information

Suggested Package Outline Dimensions millimeters



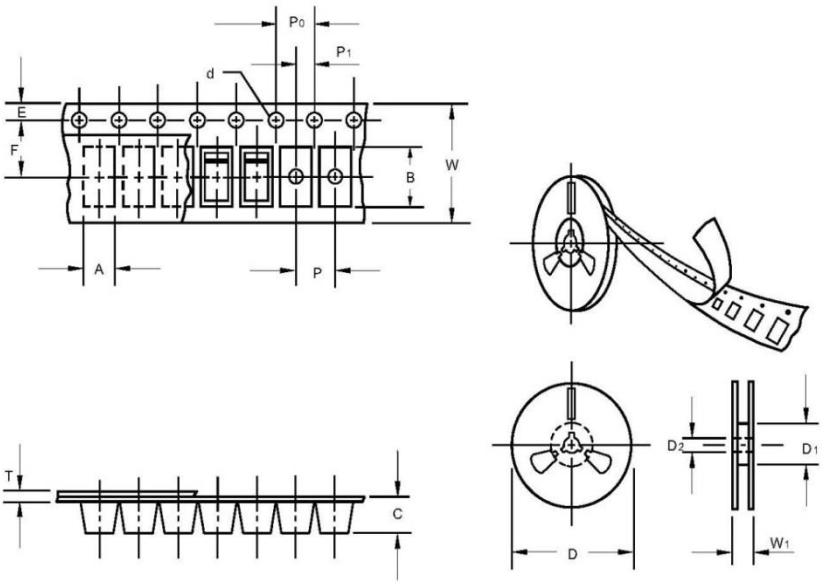
Dim.	Min.	Max.
A	3.70	4.60
B	4.50	5.60
C	2.25	2.95
D	1.25	1.85
E	0.90	1.10
F	2.50	3.50
G	0.15	0.40
All Dimensions in millimeter		

Mounting pad Outline Dimensions millimeters



4. Packing and Ordering information

Packing information millimeters



Item	Symbol	Dimension
Carrier width	A	2.79±0.15
Carrier length	B	5.10±0.15
Carrier depth	C	1.40±0.15
Sprocket hole	d	1.55±0.10
Reel outside diameter	D	330.0±1.0
Reel inner diameter	D1	75±1.0
Feed hole diameter	D2	13.5±1.0
Stocket hole position	E	1.75±0.10
Punch hole position	F	5.5±0.05
Punch hole pitch	P	4.0±0.10
Sprocket hole pitch	P0	4.0±0.10
Embossment center	P1	2.0±0.10
Totall tape thickness	T	0.3±0.10
Tape width	W	12.0±0.15
Reel width	W1	18.1±1.5

Ordering information

Part Number	Package	Base Quantity	Delivery mode
P3L300F-A	Flat SMA with heat sink	10000	13" diameter plastic tape and reel

Mechanical

- Case: SMAF-A (Flat SMA with heat sink)
- Molder Plastic: UL Flammability Classification Rating 94V-0
- Device Weight : 0.0012 ounces (0.033grams) – SMAF-A