PD - 94396

International
IOR Rectifier

SCHOTTKY RECTIFIER
HIGH EFFICIENCY SERIES

120LQ100

120 A, 100V

Major Ratings and Characteristics

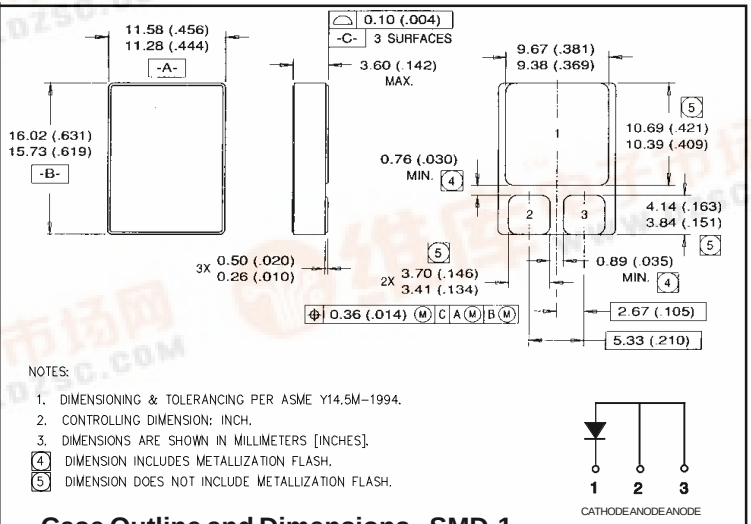
Characteristics	120LQ100	Units
$I_{F(AV)}$	120	A
V_{RRM}	100	V
I_{FSM} @ tp = 8.3ms half-sine	1000	A
V_F @ 120Apk, T_J =125°C	0.74	V
T_J, T_{stg} Operating and storage	-55 to 150	°C

Description/Features

The 120LQ100 Schottky rectifier has been expressly designed to meet the rigorous requirements of hi-rel environments. It is packaged in the hermetic surface mount SMD-1 ceramic package. The device's forward voltage drop and reverse leakage current are optimized for the lowest power loss and the highest circuit efficiency for typical high frequency switching power supplies and resonent power converters. Full MIL-PRF-19500 quality conformance testing is available on source control drawings to TX, TXV and S quality levels.

- Hermetically Sealed
- Low Forward Voltage Drop
- High Frequency Operation
- Guard Ring for Enhanced Ruggedness and Long term Reliability
- Surface Mount
- Lightweight

CASE STYLE



Case Outline and Dimensions - SMD-1

03/15/02

Voltage Ratings

	Part number	120LQ100
V_R	Max. DC Reverse Voltage (V)	100
V_{RWM}	Max. Working Peak Reverse Voltage (V)	

Absolute Maximum Ratings

	Parameters	Limits	Units	Conditions
$I_{F(AV)}$	Max. Average Forward Current See Fig. 5	120	A	50% duty cycle @ T_C = 58°C, square waveform
I_{FSM}	Max. Peak One Cycle Non - Repetitive Surge Current	1000	A	@ t_p = 8.3 ms half-sine

Electrical Specifications

	Parameters	Limits	Units	Conditions	
V_{FM}	Max. Forward Voltage Drop See Fig. 1①	0.64	V	@ 30A	T_J = -55°C ②
		0.74	V	@ 60A	
		0.92	V	@ 120A	
		0.62	V	@ 30A	T_J = 25°C ②
		0.75	V	@ 60A	
		0.94	V	@ 120A	
		0.53	V	@ 30A	T_J = 125°C ②
		0.62	V	@ 60A	
		0.74	V	@ 120A	
I_{RM}	Max. Reverse Leakage Current See Fig. 2①	60	µA	T_J = 25°C	V_R = rated V_R ②
		15	mA	T_J = 100°C	
		60	mA	T_J = 125°C	
C_T	Max. Junction Capacitance	2616	pF	V_R = 5V_{DC} (1MHz, 25°C) ②	
L_S	Typical Series Inductance	5.9	nH	Measured from center of cathode pad to center of anode pad	

Thermal-Mechanical Specifications

	Parameters	Limits	Units	Conditions
T_J	Max.Junction Temperature Range	-55 to 150	°C	
T_{stg}	Max. Storage Temperature Range	-55 to 150	°C	
R_{thJC}	Max. Thermal Resistance, Junction to Case	0.8	°C/W	DC operation See Fig. 4
wt	Weight (Typical)	2.6	g	
	Die Size	275X275	mils	
	Case Style	SMD-1		

① Pulse Width < 300µs, Duty Cycle < 2%
② Pins 2 and 3 externally tied together

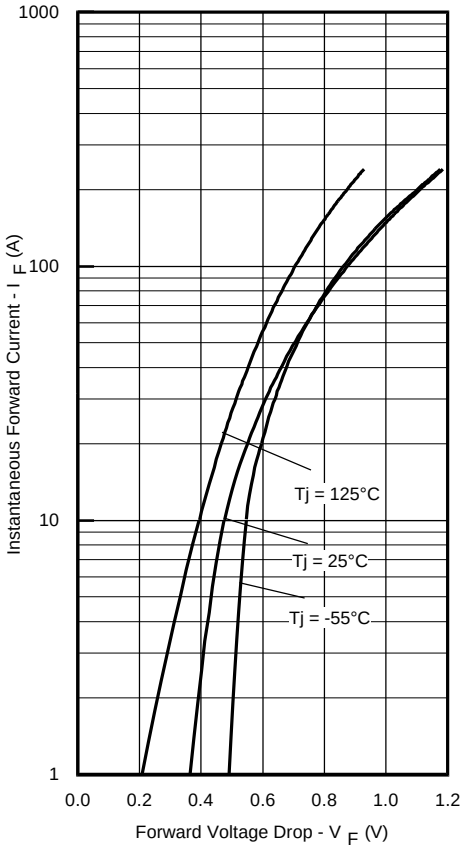


Fig. 1 - Max. Forward Voltage Drop Characteristics

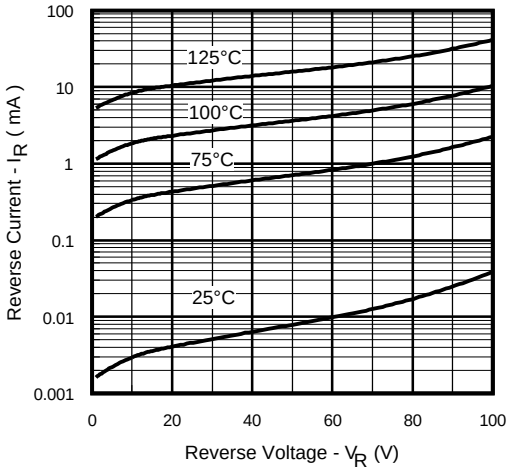


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

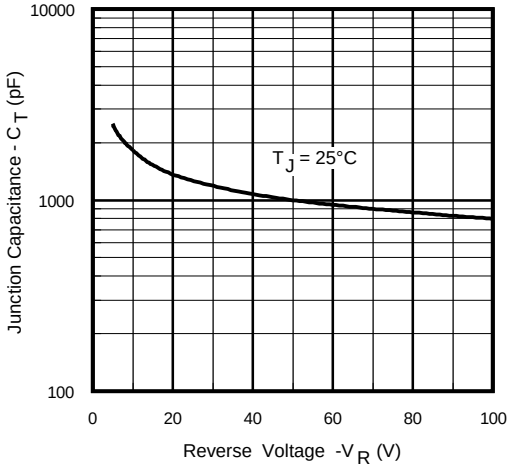


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

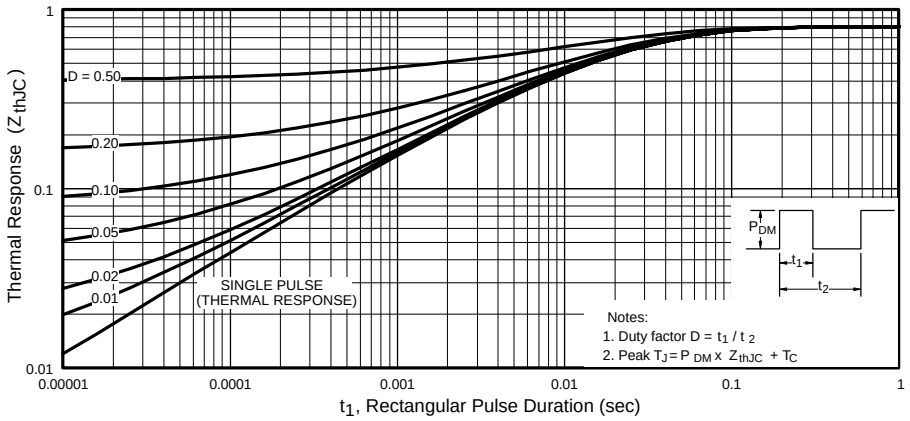


Fig. 4 - Max. Thermal Impedance Z_{thJC} Characteristics

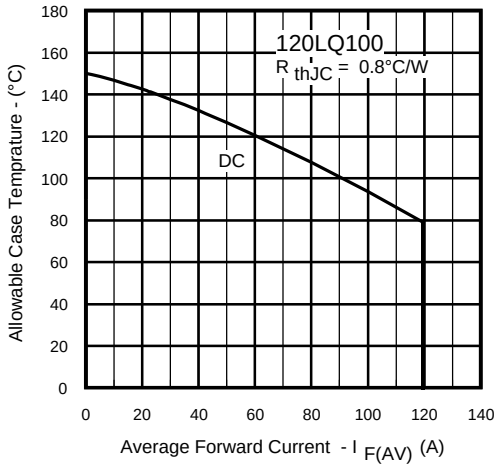


Fig. 5 - Max. Allowable Case Temperature Vs.
Average Forward Current

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