

SCHOTTKY BARRIER RECTIFIERS

FEATURES

- Very low profile - typical height of 1.1mm
- Ideal for automated placement
- Trench Schottky Technology
- High current capability, low VF
- High efficiency operation
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C
- Compliant to RoHS Directive 2002/95/EC and accordance to WEEE 2002/96/EC
- For use in low voltage, high frequency inverters, free wheeling, **switching power supplies, DC-DC converter**, and polarity protection applications

MECHANICAL DATA

- Case: TO-277A (SMPC)

Molding compound meets UL 94 V-0 flammability rating

- Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

REVERSE VOLTAGE 120 Volts
FORWARD CURRENT 12 Amperes

TO-277A

Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

CHARACTERISTICS	SYMBOL	SHTS12L120	UNIT
Maximum Recurrent Peak Reverse Voltage	V _{RRM}	120	V
Maximum RMS Voltage	V _{RMS}	84	V
Maximum DC Blocking Voltage	V _{DC}	120	V
Maximum Average Forward Rectified Current (See Fig.1)	I(AV)	12	A
Peak Forward Surge Current 8.3ms Single Half Sine-Wave Super Imposed on Rated Load	I _{FSM}	160	A
Peak repetitive reverse current at tp = 2 μs, 1 kHz	I _{RRM}	1	A
Operating Temperature Range	T _J	-55 to +150	°C
Storage Temperature Range	T _{STG}	-55 to +175	°C

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)

PARAMETER / CONDITIONS	SYMBOL	Typ	Max	UNIT	
Breakdown voltage per diode	V _{BR}	120 (minimum)	-	V	
Forward Voltage (Note1)	V _F	IF=3A @TJ=25°C	0.44	V	
		IF=3A @TJ=125°C	0.35		
		IF=6A @TJ=25°C	0.61		0.66
		IF=6A @TJ=125°C	0.52		0.56
		IF=12A @TJ=25°C	0.79		0.84
		IF=12A @TJ=125°C	0.63		0.67
Maximum DC Reverse Current @TJ=25°C	I _R		120	μA	
at Rated DC Blocking Voltage @TJ=125°C			72	mA	
Typical Junction Capacitance (Note2)	C _J	673		pF	

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	Typ	UNIT
		SHTS12L120	
Thermal Resistance Per Diode (Note3)	RθJL	4.0	°C/W

NOTES: 1. 300us pulse width, 2% duty cycle.
2. Measured at 1.0 MHz and applied reverse voltage of 4.0V DC.
3. Thermal resistance junction to case.

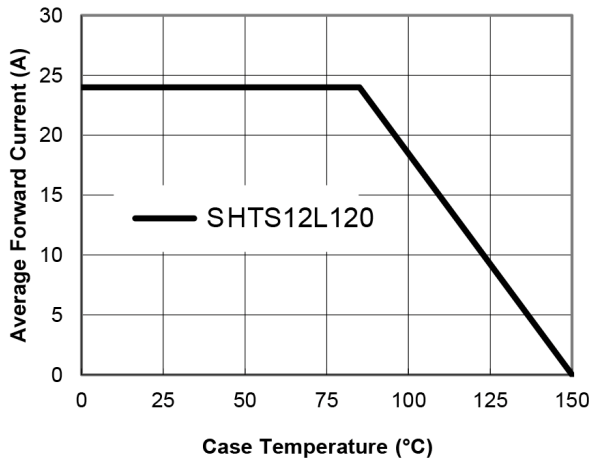


Figure 1. Forward Current Derating Curve

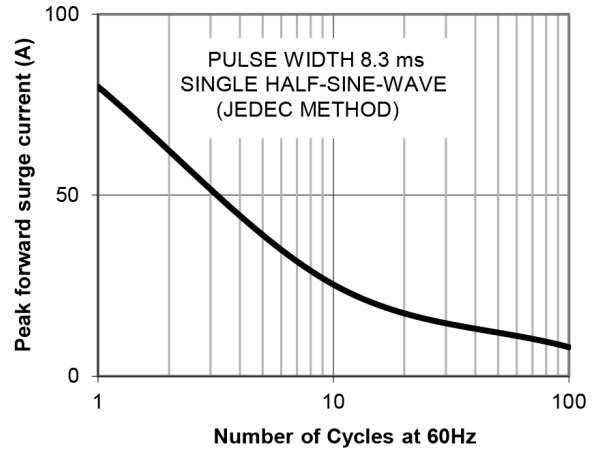


Figure 2. Maximum NON-Repetitive

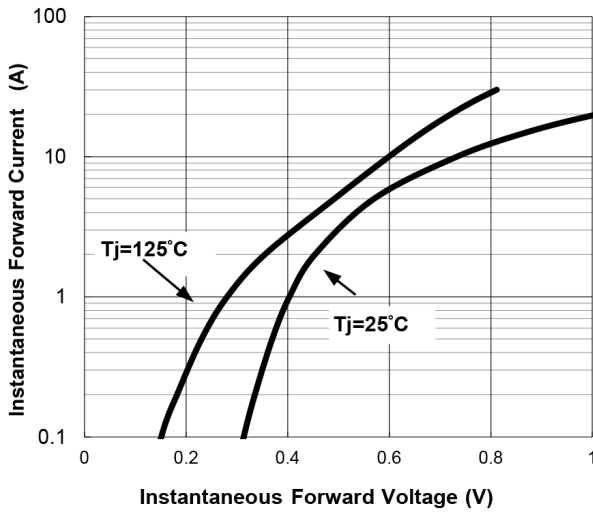


Figure 3. Typical Instantaneous Forward Characteristics Per Leg

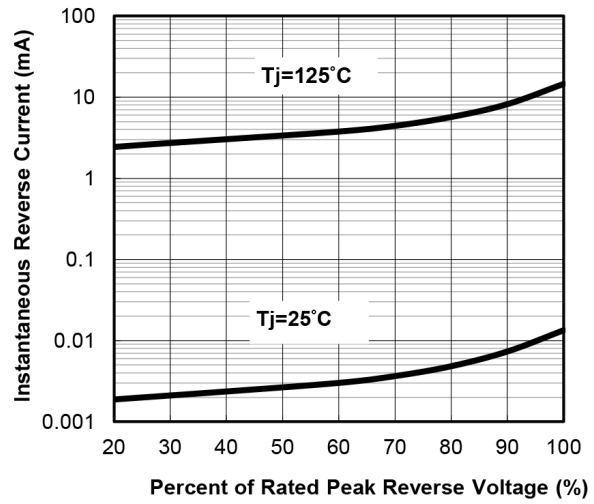


Figure 4. Typical Reverse Characteristics

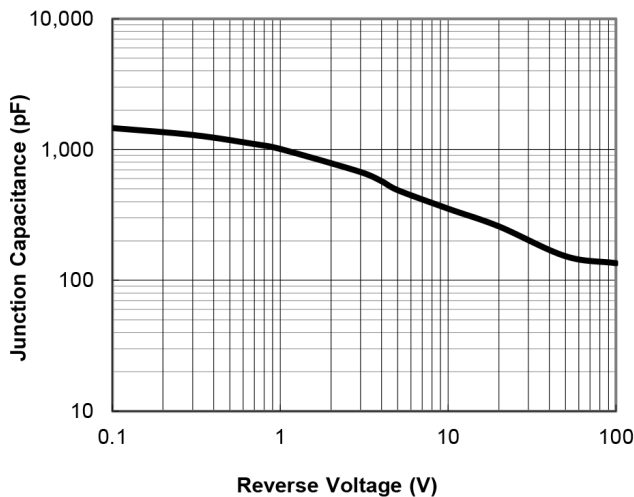


Figure 5. Typical Junction Capacitance

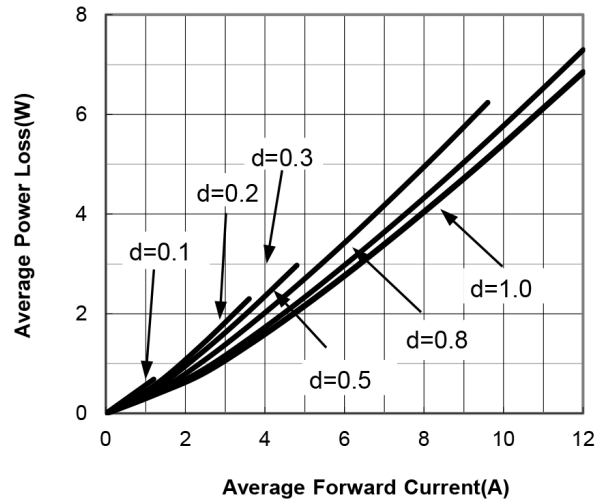


Figure 6. Forward Power Loss Characteristics