Schottky Diodes

Features

- High frequency operation
- Low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability
- Solder dip 275 °C max. 7s, per JESD 22-B106

Typical Applications

Typical applications are in switching power supplies, converters, freewheeling diodes, and reverse battery protection.

Mechanical Data

- **Package**: R-7
  Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity**: Color band denotes cathode end

■Maximum Ratings (T_a=25℃ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	12SQ045
Device Marking Code			12SQ045
Repetitive Peak Reverse Voltage	V_{RRM}	V	45
Average Rectified Output Current @60Hz sine wave, R-load, T_a=25℃	I_O	A	12
Surge(Non-repetitive)Forward Current @60Hz half sine wave, 1 cycle, T_a=25℃	I_{FSM}	A	275
Current Squared Time @1ms≤t≤8.3ms Tj=25℃	I^2t	A^2s	315
Storage Temperature	Tstg	℃	-55 ~+150
Junction Temperature IN DC Forward Mode-Forward Operations，without reverse bias, t ≤1 h (Fig. 1)①	T_j	℃	-55 ~+200

NOTE

① Meets the requirements of IEC 61215 Ed. 2 bypass diode thermal test.

■Electrical Characteristics（T_a=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	12SQ045
Maximum instantaneous forward voltage drop per diode	V_{FM}	V	I_{FM}=12.0A	0.55
Maximum DC reverse current at rated DC blocking voltage per diode	I_{RRM1}	mA	V_{RM}=V_{RRM} T_a=25℃	0.5
	I_{RRM2}		V_{RM}=V_{RRM} T_a=100℃	20

■Thermal Characteristics （T_a=25℃ Unless otherwise specified）

PARAMETER		SYMBOL	UNIT	12SQ045
Thermal Resistance	Between junction and case	$R_{\theta J-C}$	℃/W	2.2

■Ordering Information (Example)

PREFERED P/N	UNIT WEIGHT(g)	MINIIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
12SQ045	Approximate 1.944	500	/	5000	Tape
12SQ045	Approximate 1.944	750	/	3000	Reel

■Characteristics (Typical)

FIG1:Io -Tc Curve

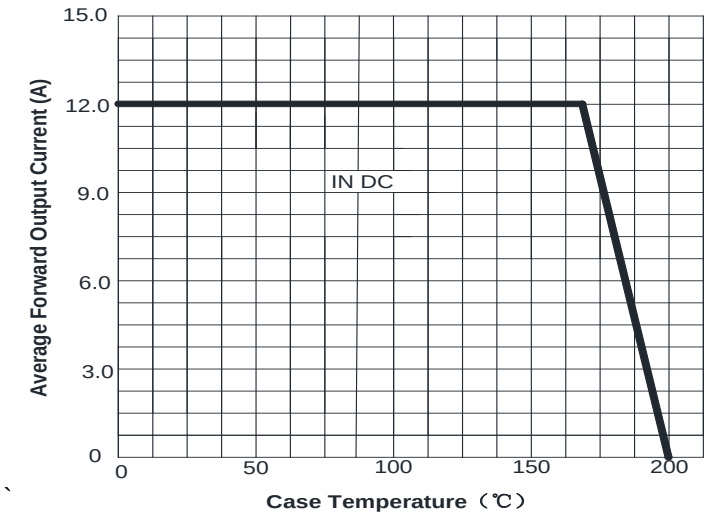


FIG2:Surge Forward Current Capability

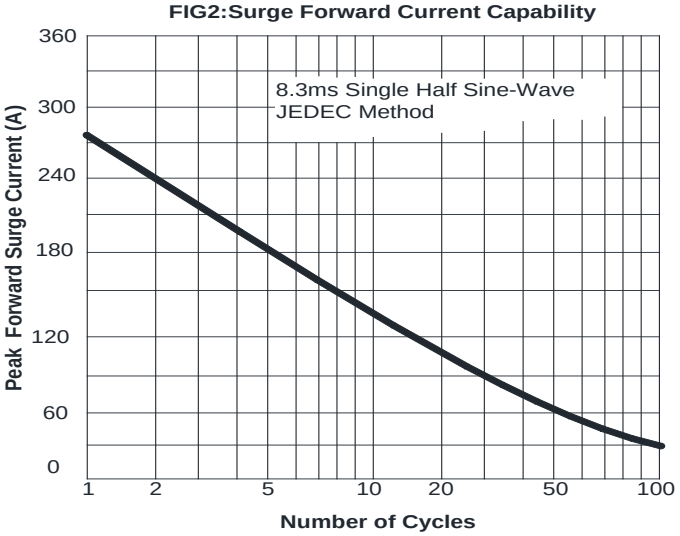


FIG3: Forward Voltage

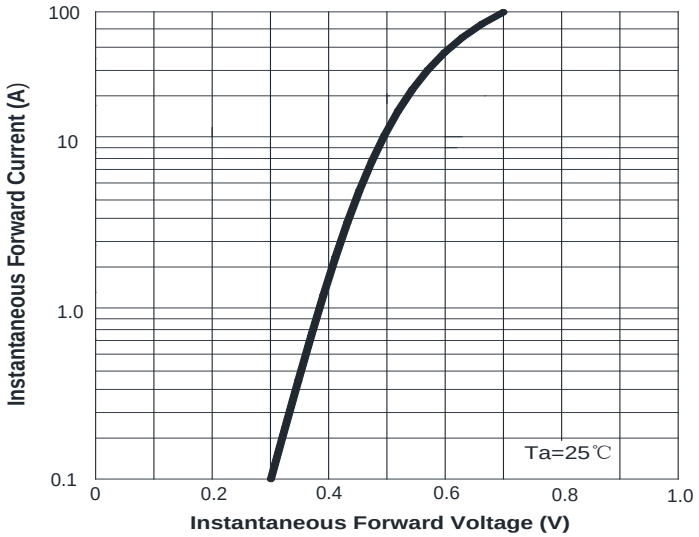
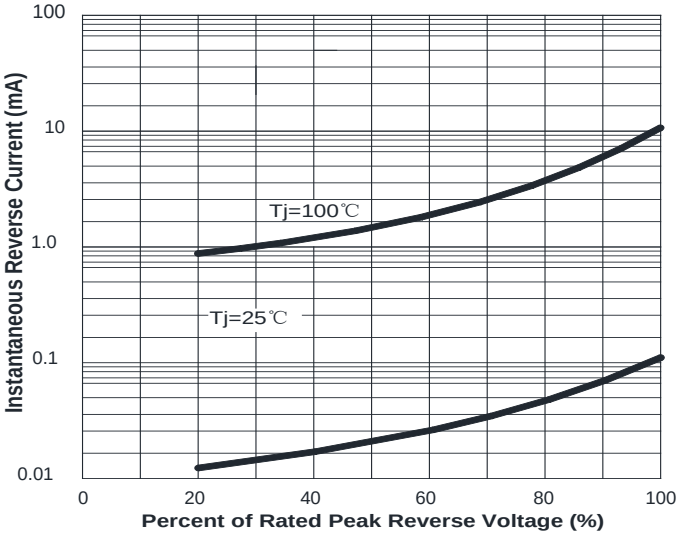
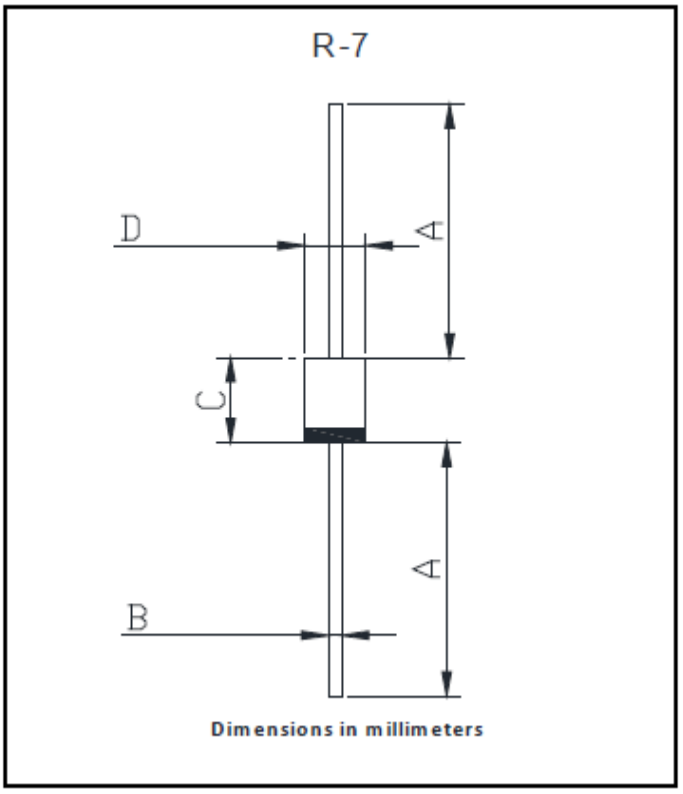


FIG4: Typical Reverse Characteristics



■Outline Dimensions



R-7		
Dim	Min	Max
A	25.4	/
B	1.2	1.4
C	7.3	7.7
D	7.8	8.2

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