

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-6
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°C 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°C	I _O	A	12
Surge(Non-repetitive)Forward Current @60HZ sine wave, 1 cycle, T _a =25°C	I _{FSM}	A	235
Current Squared Time @1ms≤t<8.3ms T _j =25°C,	I ² t	A ² S	166
Storage Temperature	T _{stg}	°C	-55 ~+150
Junction Temperature IN DC Forward Mode-Forward Operations, without reverse bias, t ≤1 h (Fig. 1)①	T _j	°C	-55 ~+200

NOTE

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

■Electrical Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	12SQ045
Maximum instantaneous forward voltage drop per diode	V _{FM}	V	I _{FM} =12.0A	0.50
Maximum DC reverse current at rated DC blocking voltage per diode	I _{RRM1}	mA	V _{RM} =V _{RRM} T _a =25°C	0.1
	I _{RRM2}		V _{RM} =V _{RRM} T _a =100°C	5.0
	I _{RRM3}		V _{RM} =V _{RRM} T _a =125°C	18



12SQ045

■ Thermal Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER		SYMBOL	UNIT	12SQ045
Thermal Resistance	Between junction and case	R _{θJ-C}	°CW	2.5
	Between junction and lead (at 1mm from the root of body)	R _{θJ-l}		2.0
	Between junction and ambient (at 9mm from the surface of case)	R _{θJ-a}		45

■ 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: I_o-T_c Curve

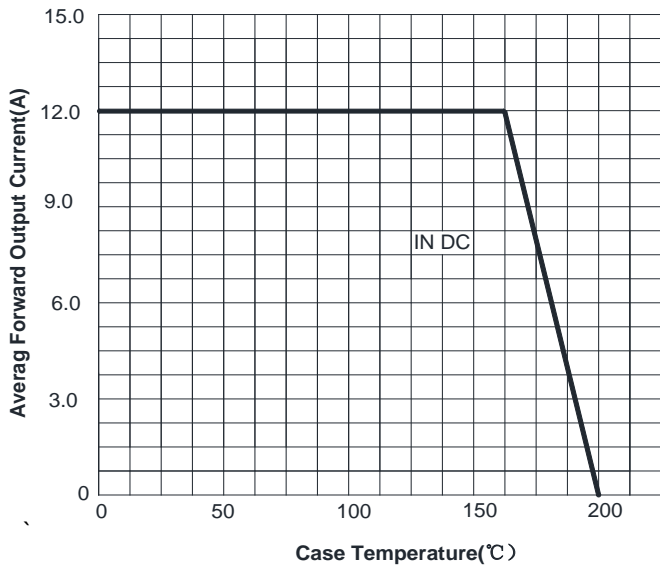


FIG2: Surge Forward Current Capability

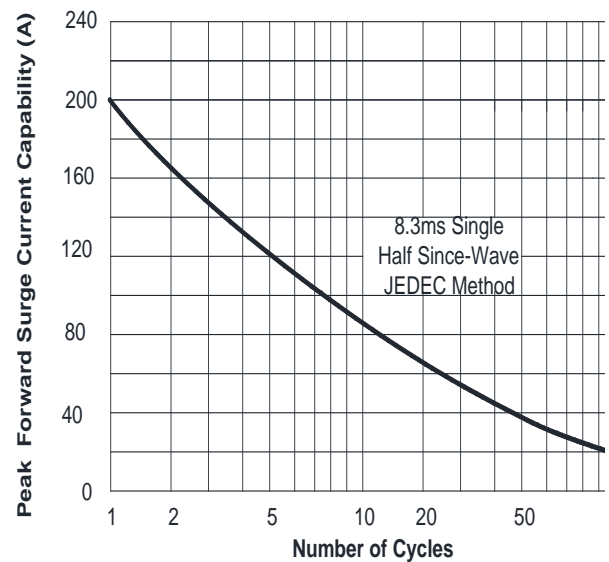


FIG3: Forward Voltage

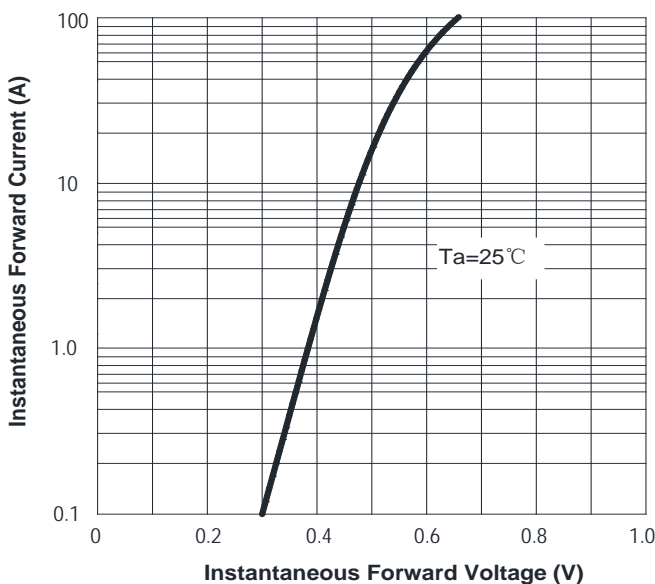
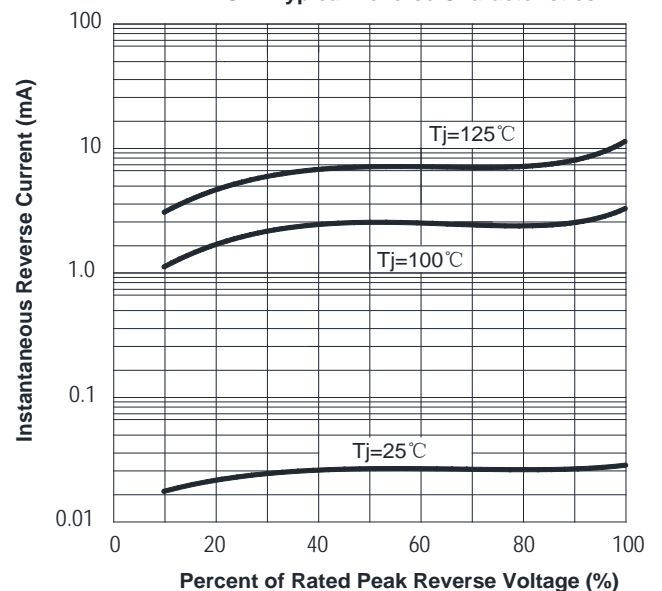
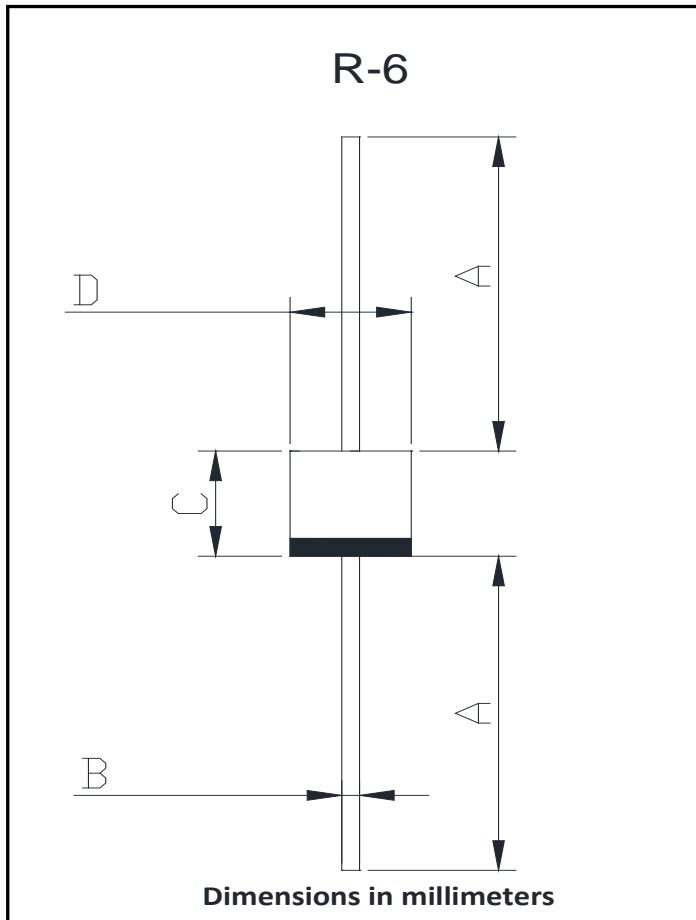


FIG4: Typical Reverse Characteristics



■ Outline Dimensions



R-6		
Dim	Min	Max
A	25.4	/
B	1.2	1.3
C	8.6	9.1
D	8.6	9.1

Disclaimer



12SQ045

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