

SURFACE MOUNT ULTRAFAST RECTIFIER

VOLTAGE 50 to 1000 Volt CURRENT 5 Ampere

Features

- Flammability Classification 94V-O
- For surface mounted applications in order to optimize board space
- Easy pick and place
- Glass passivated Junction
- Low Forward Drop
- High temperature soldering : 260°C /10 seconds at terminals
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Green molding compound as per IEC61249 Std. . (Halogen Free)
- AEC-Q101 qualified (Automotive grade with suffix "Q".)
- Expsemi electronics



Mechanical Data

- Case: JEDEC DO-214AB molded plastic
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Standard packaging: 12mm tape (EIA-481)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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

Catalog Number	SYMBOLS	US5A	US5B	US5D	US5G	US5J	US5K	US5M	UNITS
Maximum repetitive peak reverse voltage	V _{RRM}	50	100	200	400	600	800	1000	VOLTS
Maximum RMS voltage	V _{RMS}	35	70	140	280	420	560	700	VOLTS
Maximum DC blocking voltage	V _{DC}	50	100	200	400	600	800	1000	VOLTS
Maximum average forward rectified current at T _L =75°C	I _(AV)	5.0							Amps
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I _{FSM}	150							Amps
Maximum instantaneous forward voltage at 5.0A	V _F	1.3			1.8	2.1			Volts
Maximum DC reverse current T _A =25°C at rated DC blocking voltage T _A =125°C	I _R	2.0 350.0							μA
Maximum reverse recovery time (NOTE 1)	t _{rr}	50				75			ns
Typical junction capacitance (NOTE 2)	C _J	28.0							pF
Typical thermal resistance (NOTE 3)	R _{θJA} R _{θJA}	25.0 55.0							°C/W
Operating junction and storage temperature range	T _J ,T _{STG}	-55 to +150							°C

NOTES: 1. Measured at 1 MHz and applied $V_R = 4$ volts.
 2. Mounted on a FR4 PCB, single-sided copper, with 100cm² copper pad area
 3. Mounted on a FR4 PCB, single-sided copper, mini pad.

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FIG.1: I_o -TL Curve

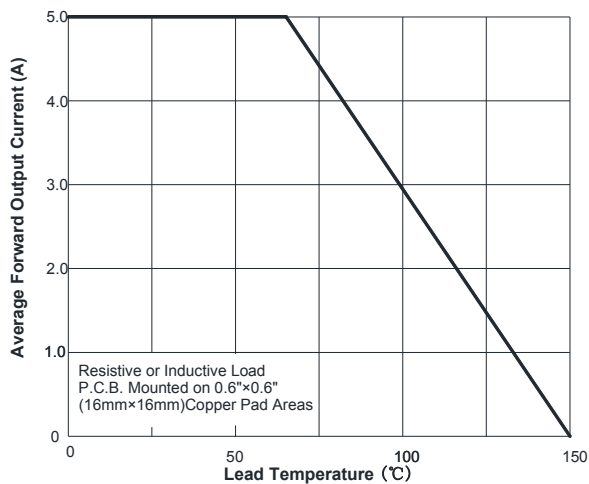


FIG.2: Forward Surge Current Capability

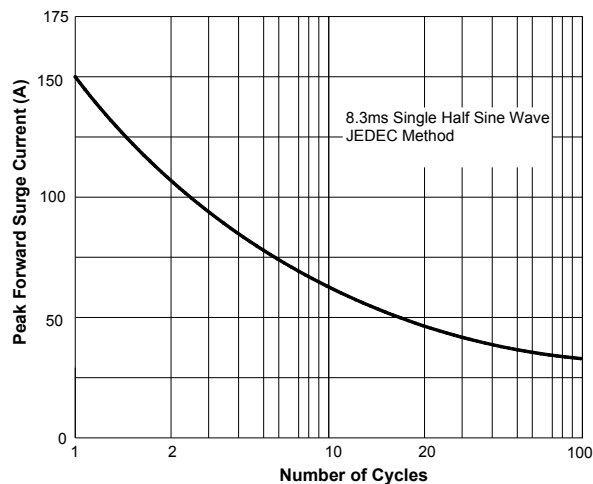


FIG.3: Typical Forward Voltage

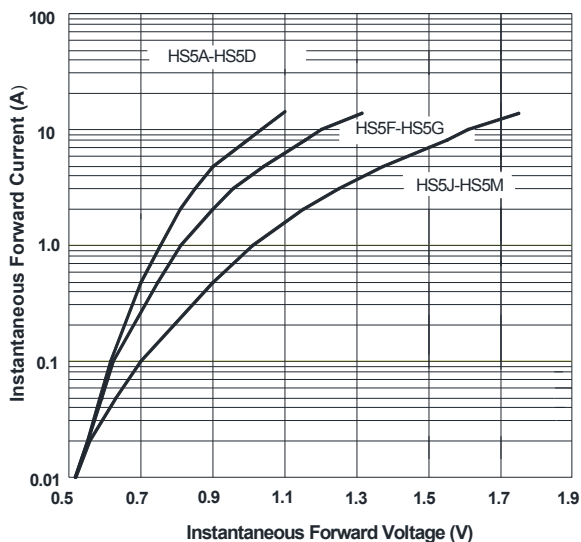
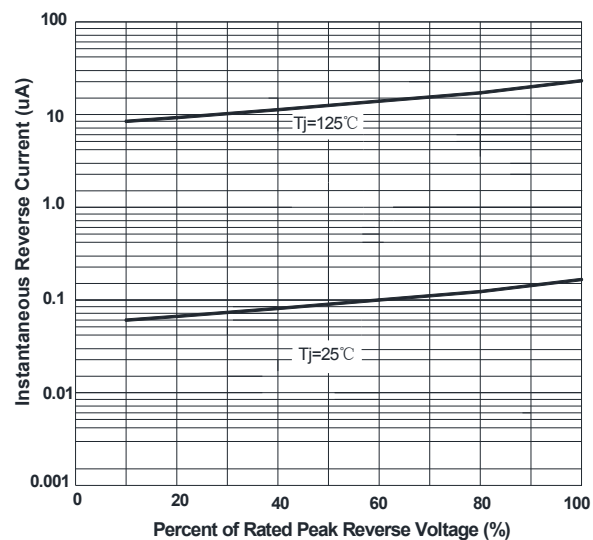
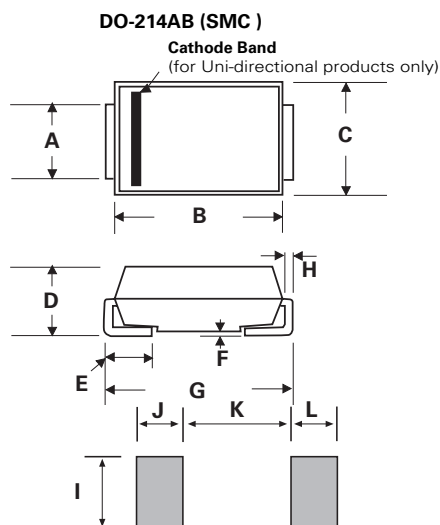


FIG.4: Typical Reverse Characteristics



Dimensions

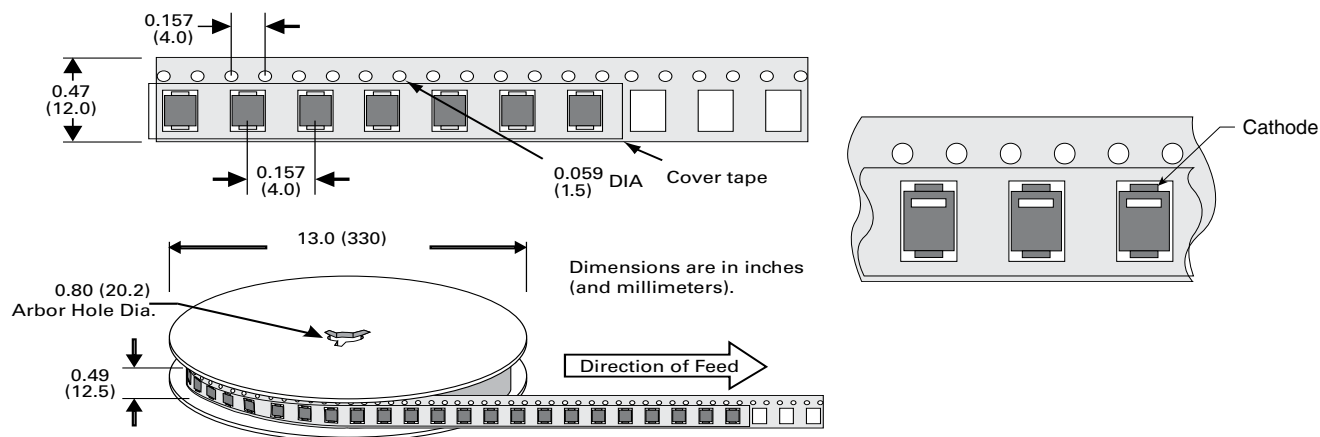


Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.108	0.128	2.750	3.250
B	0.260	0.291	6.600	7.400
C	0.220	0.246	5.590	6.250
D	0.078	0.108	1.980	2.750
E	0.030	0.060	0.760	1.520
F	0.002	0.008	0.051	0.203
G	0.303	0.323	7.700	8.200
H	0.006	0.012	0.152	0.305
I	0.129	-	3.300	-
J	0.094	-	2.400	-
K	-	0.165	-	4.200
L	0.094	-	2.400	-

Packaging Options

Part number	Component Package	Quantity	Packaging Option	Packaging Specification
US5X	DO-214AB	3000	Tape & Reel - 16mm tape/13" reel	EIA STD RS-481

Tape and Reel Specication



Note: Devices are packde in accordance with EIA standard RS-481-Aand specification given above.