

DATA SHEET

SUPER FAST RECOVERY RECTIFIER

GENERAL PURPOSE

ES2 SERIES

RoHS compliant & Halogen free

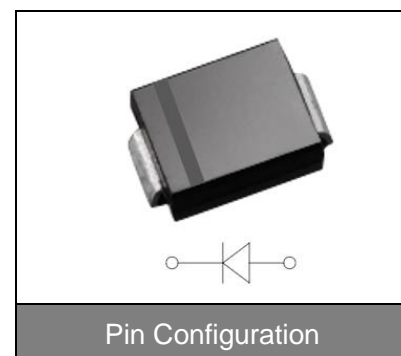
Product specification— July 26, 2023 V.0



Super Fast Series Rectifier Data Sheet

Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- High forward surge capability
- Super Fast reverse recovery time $t_{rr_{max}}: 35ns$
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C



Typical Applications

For use in high frequency rectification of power supplies, inverters, converters, and freewheeling diodes for consumer and telecommunication.

Mechanical Data

- Package: DO-214AA (SMB) Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- Polarity: Cathode line denotes the cathode end

Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOLS	ES2A	ES2B	ES2D	ES2G	ES2J	UNITS
Marking Code	/	ES2A	ES2B	ES2D	ES2G	ES2J	/
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	50	100	200	400	600	V
Maximum RMS Voltage	V_{RMS}	35	70	140	280	420	V
Maximum DC blocking Voltage	V_{DC}	50	100	200	400	600	V
Average rectified output current @60Hz sine wave, resistance load, TL (Fig.1)	I_O	2.0					A
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, $T_j=25^\circ C$	I_{FSM}	50					A
Current squared time @1ms≤t≤8.3ms $T_j=25^\circ C$	I^2t	10.4					A ² s
Typical Thermal Resistance	$R_{\theta JA}^{(1)}$	75					°C/W
Storage temperature	T_{Stg}	-55 ~ +150					°C
Junction temperature	T_j	-55 ~ +150					°C

Note (1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

Electrical Characteristics (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOLS	TEST CONDITIONS	ES2A	ES2B	ES2D	ES2G	ES2J	UNITS
Maximum instantaneous forward voltage	V _F	I _{FM} =2.0A	0.95			1.3	1.7	V
Maximum reverse recovery time	trr	I _F =0.5A, I _R =1.0A, I _{rr} =0.25A	35					ns
Maximum DC reverse current at rated DC blocking voltage	I _R	@T _a =25°C	5.0					uA
		@T _a =125°C	200					

Typical Characteristics Curves

Figure 1. Io-TL Curve

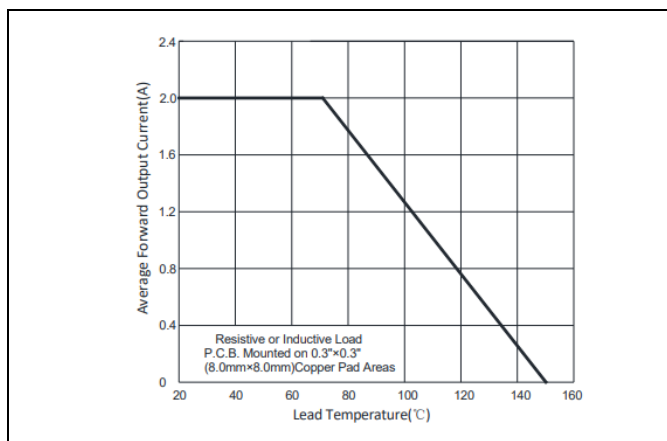


Figure 1. Surge Forward Current Capability

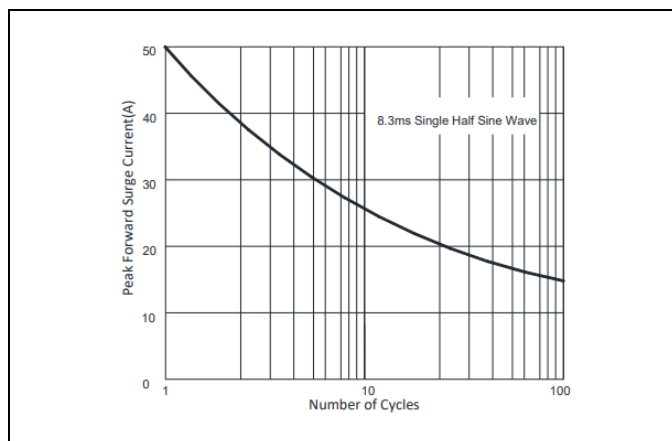


Figure 3. Typical Forward Voltage

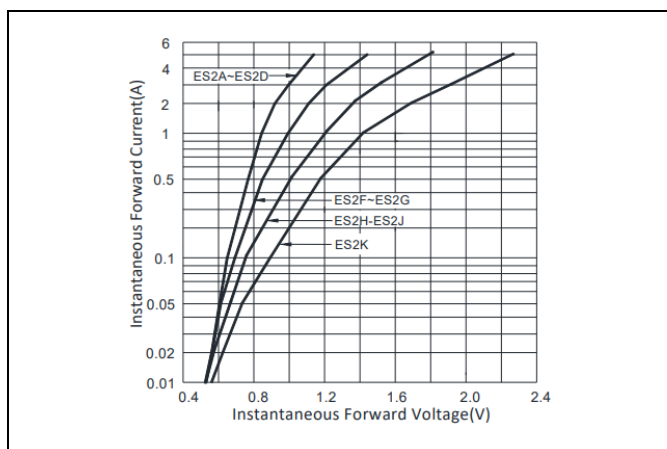


Figure 4. Typical Reverse Characteristics

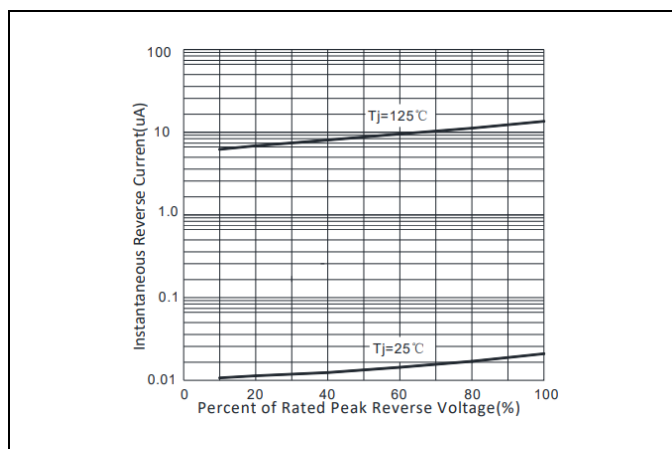
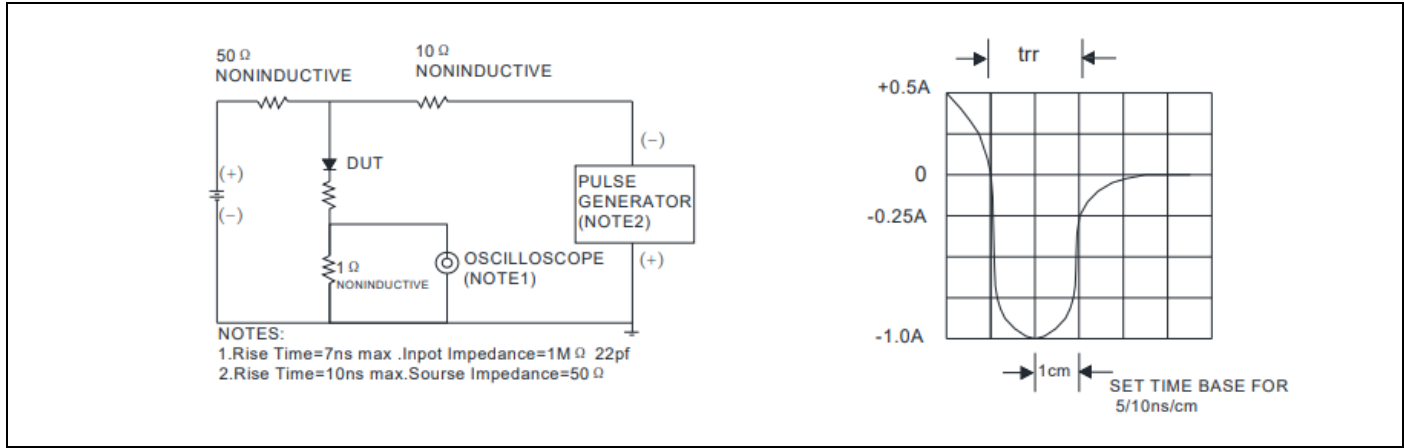


Figure 5. Diagram of circuit and Testing wave form of reverse recovery time

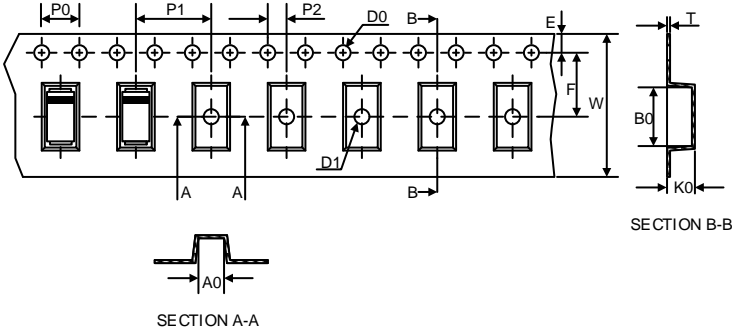
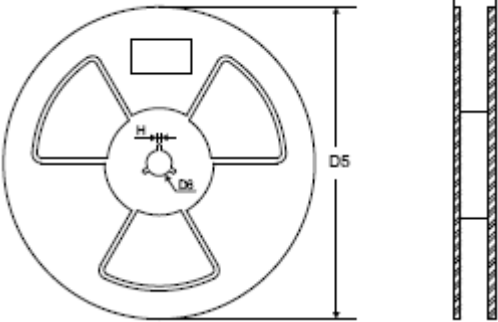


Dimensions (SMB/DO-214AA)

Product:		Millimeters		Inches	
		Min.	Max.	Min.	Max.
	L	4.05	4.75	0.160	0.187
	D	3.30	3.94	0.130	0.155
	D1	1.85	2.20	0.073	0.087
	T	5.10	5.60	0.201	0.221
	T1	0.76	1.52	0.030	0.060
	d	0.05	0.20	0.002	0.008
	H	1.99	2.65	0.078	0.104

Pad:

Packaging

<div>Tape</div> 	Symbol	Dimension (mm)
	W	12.0±0.15
	P0	4.00±0.10
	P1	8.00±0.10
	P2	2.00±0.10
	D0	Φ1.55±0.05
	D1	Φ1.55±0.05
	E	1.75±0.05
	F	5.50±0.10
	A0	3.65±0.10
	B0	5.60±0.10
	K0	2.57±0.10
	T	0.22±0.05
<div>13" Reel</div> 	D5	Φ330±1.00
	D6	Φ17.0+1/-0.50
	H	3.0max.
	W2	16.0±0.50
	Quantity: 3000pcs	

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