Innovative Service Around the Globe YAGEO

DATA SHEET

SUPER FAST RECOVERY RECTIFIER
GENERAL PURPOSE

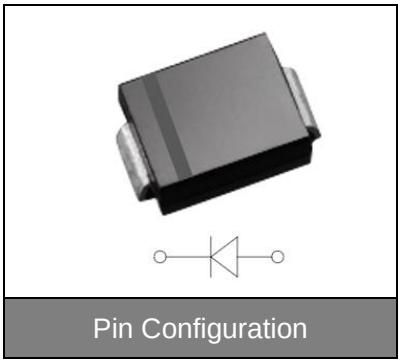
ES2 SERIES

RoHS compliant & Halogen free

Product specification– July 26, 2023 V.0

Super Fast Series Rectifier Data Sheet

Features



Pin Configuration

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- High forward surge capability
- Super Fast reverse recovery time trr_{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℃ 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℃	I_{FSM}	50					A
Current squared time @1ms≤t≤8.3ms Tj=25℃	I^2t	10.4					A^2s
Typical Thermal Resistance	$R_{\theta J\text{-}A}$(1)	75					℃/W
Storage temperature	T_{Stg}	-55 ~ +150					℃
Junction temperature	T_j	-55 ~ +150					℃

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℃ 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℃	5.0					uA
		@T_a =125℃	200					

Typical Characteristics Curves

Figure 1. Io-TL Curve

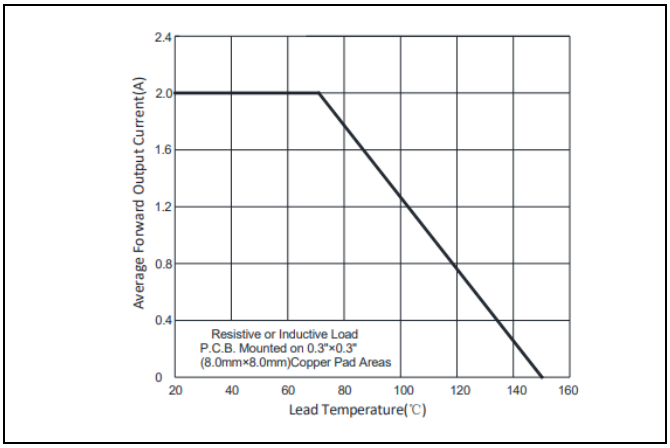


Figure 1. Surge Forward Current Capability

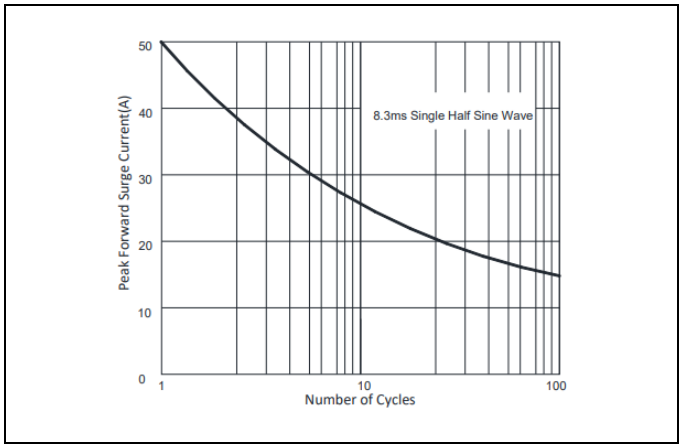


Figure 3. Typical Forward Voltage

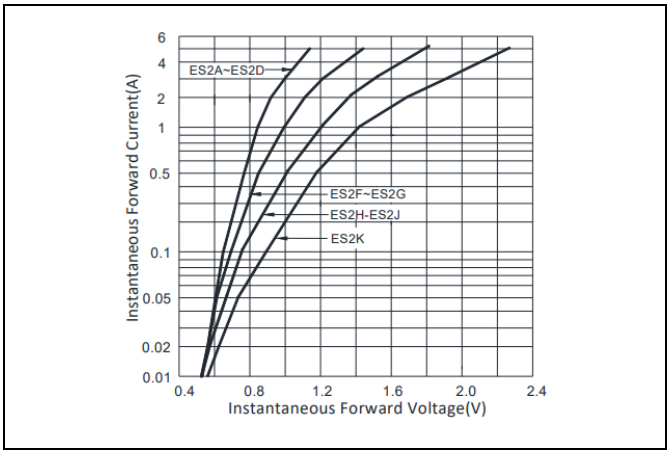


Figure 4. Typical Reverse Characteristics

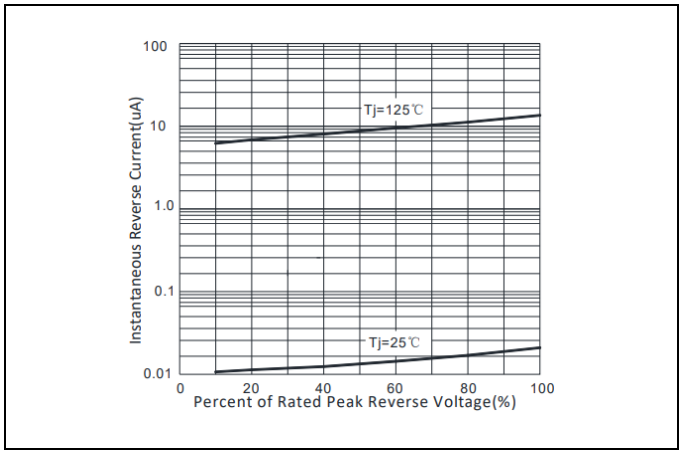
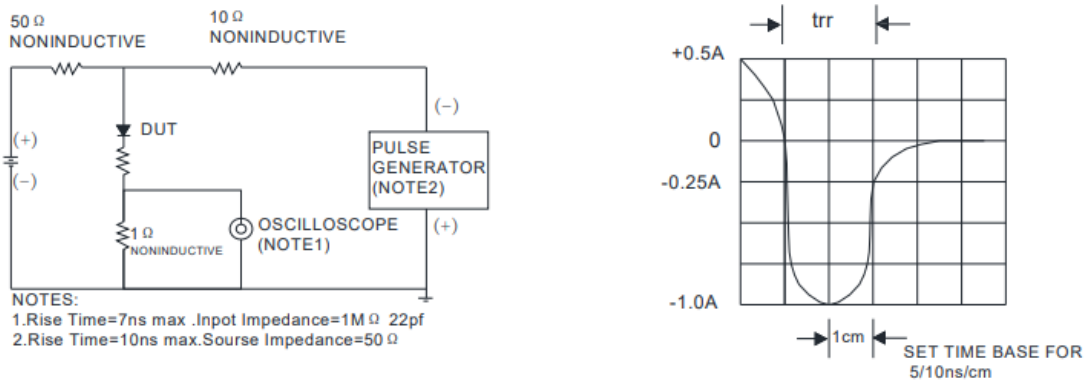
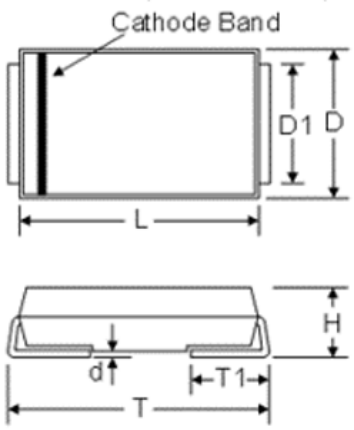


Figure 5. Diagram of circuit and Testing wave form of reverse recovery time

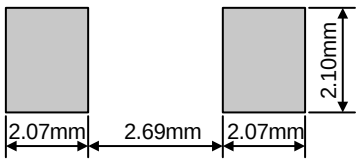


Dimensions (SMB/DO-214AA)

Product:



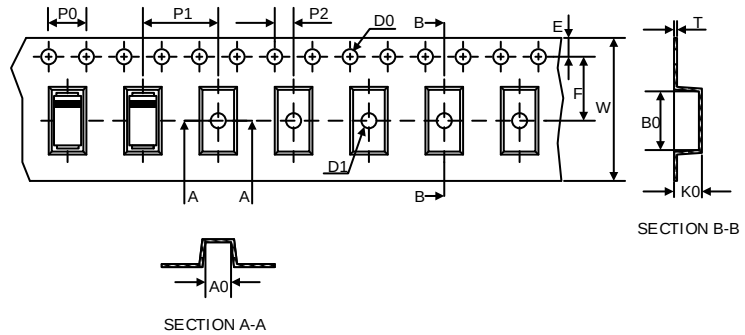
Pad:



Symbol	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

Packaging

Tape

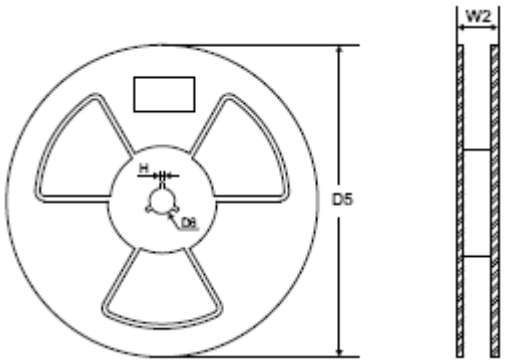


SECTION B-B

SECTION A-A

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

13” Reel



D5	Φ330±1.00
D6	Φ17.0+1/-0.50
H	3.0max.
W2	16.0±0.50
Quantity: 3000pcs	

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