



ES2AF THRU ES2JF

Reverse Voltage - 50 to 600 Volts Forward Current - 2.0 Ampere

SURFACE MOUNT SUPER FAST RECOVERY RECTIFIER

Features

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ For surface mounted applications
- ◆ Low reverse leakage
- ◆ Built-in strain relief,ideal for automated
- ◆ placement High forward surge current capability
- ◆ High temperature soldering guaranteed:
 - ◆ 250°C/10 seconds at terminals
 - Glass passivated chip junction

Mechanical Data

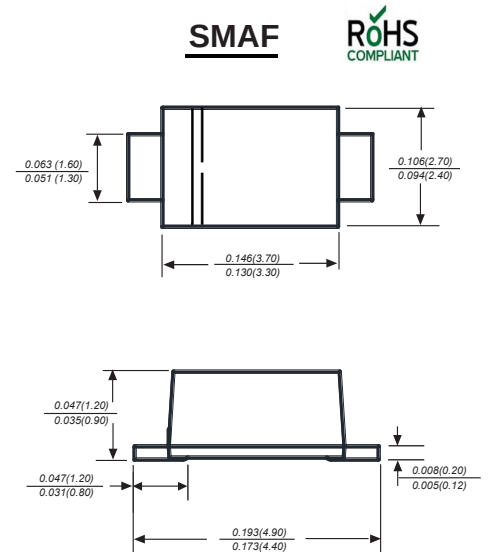
Case : JEDEC SMAF Molded plastic body

Terminals : Solder plated, solderable per MIL-STD-750,Method 2026

Polarity : Polarity symbol marking on body

Mounting Position : Any

Weight : 0.0018 ounce, 0.064 grams



Dimensions in inches and (millimeters)

Maximum Ratings And Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase half-wave 60Hz,resistive or inductive load,for capacitive load current derate by 20%.

Parameter	SYMBOLS	HY ES2AF	HY ES2BF	HY ES2CF	HY ES2DF	HY ES2EF	HY ES2GF	HY ES2JF	UNITS
Marking Code									
Maximum repetitive peak reverse voltage	V _{RRM}	50	100	150	200	300	400	600	V
Maximum RMS voltage	V _{RMS}	35	70	105	140	210	280	420	V
Maximum DC blocking voltage	V _{DC}	50	100	150	200	300	400	600	V
Maximum average forward rectified current at TL=55℃	I _(AV)	2.0							A
Peak forward surge current 8.3ms single half sine-wave superimposed onrated load (JEDEC Method)	I _{FSM}	50							A
Maximum instantaneous forward voltage at 2.0A	V _F	0.95				1.25		1.70	V
Maximum DC reverse current TA=25℃ at rated DCblocking voltage TA=125℃	I _R	5.0 50.0							uA
Maximum reverse recovery time (NOTE 1)	t _{rr}	35							ns
Typical junction capacitance (NOTE 2)	C _J	60.0							pF
Typical thermal resistance (NOTE 3)	RθJA	40.0							℃/W
Operating junction and storage temperature range	T _J ,T _{STG}	- 50 t o + 1 5 0							℃

Note:1.Reverse recovery condition $I_F=0.5\text{A}$, $I_R=1.0\text{A}$, $I_{rr}=0.25\text{A}$

2.Measured at 1MHz and applied reverse voltage of 4.0V D.C.

3.P.C.B. mounted with 0.2x0.2"(5.0x5.0mm) copper pad areas



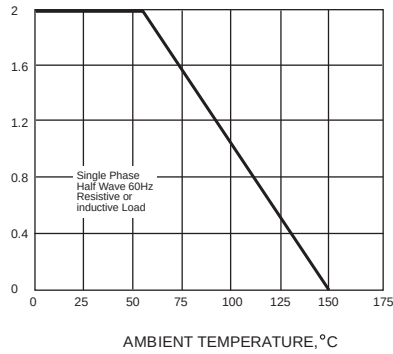
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Ratings And Characteristic Curves

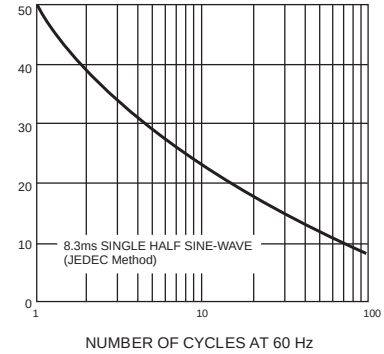
AVERAGE FORWARD RECTIFIED CURRENT,
AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



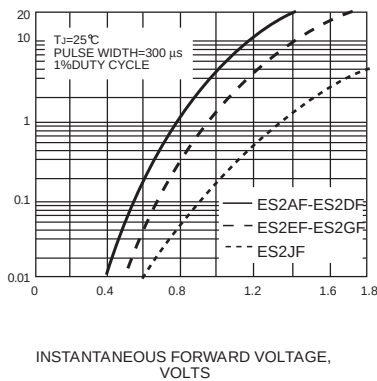
PEAK FORWARD SURGE CURRENT,
AMPERES

FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



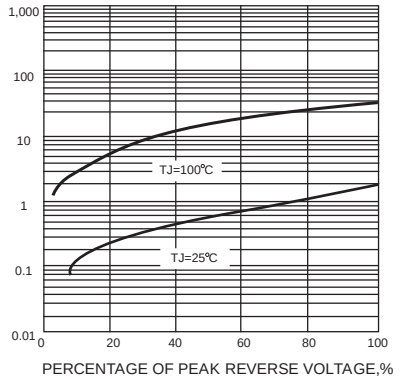
INSTANTANEOUS FORWARD
CURRENT,AMPERES

FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



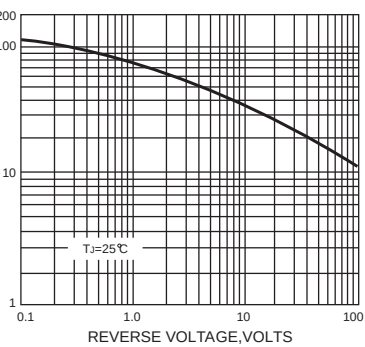
INSTANTANEOUS REVERSE CURRENT,
MICROAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS



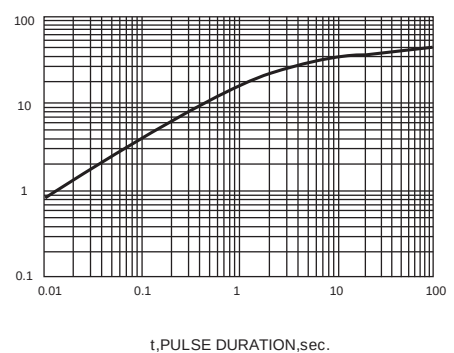
JUNCTION CAPACITANCE, pF

FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE,
°C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



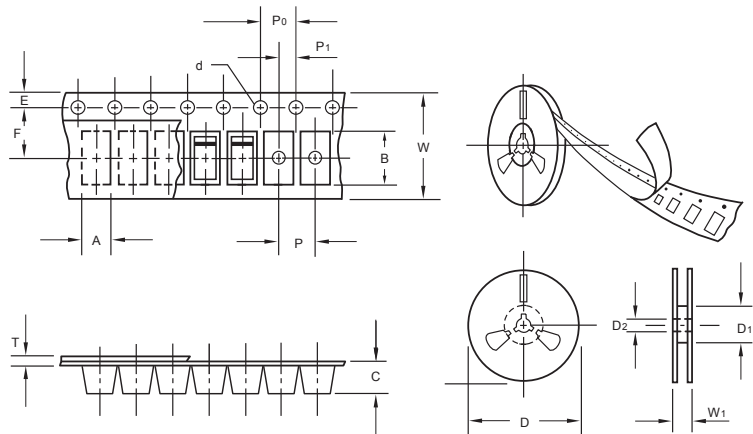
The curve above is for reference only.



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Packing information



unit:mm

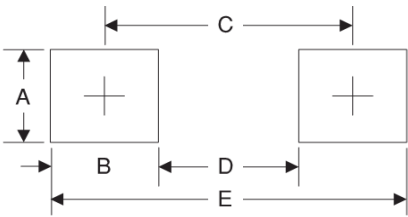
Item	Symbol	Tolerance	SMAF
Carrier width	A	0.1	2.80
Carrier length	B	0.1	4.75
Carrier depth	C	0.1	1.42
Sprocket hole	d	0.05	1.50
7" Reel outside diameter	D	2.0	178.00
7" Reel inner diameter	D ₁	min	54.40
Feed hole diameter	D ₂	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	5.05
Punch hole pitch	P	0.1	4.00
Sprocket hole pitch	P ₀	0.1	4.00
Embossment center	P ₁	0.1	2.00
Overall tape thickness	T	0.1	0.30
Tape width	W	0.3	8.00
Reel width	W ₁	1.0	12.30

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (m/m)	BOX (pcs)	INNER BOX (m/m)	REEL DIA, (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
SMAF	7"	3,000	4.0	6,000	210*208*203	178	400*265*400	120,000	10.0

Suggested Pad Layout



Symbol	Unit (mm)	Unit (inch)
A	1.8	0.071
B	1.6	0.063
C	3.8	0.150
D	2.2	0.087
E	5.4	0.213