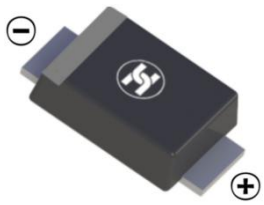
Hottech Semiconductor

ES05BF(ER05BF)

SUPER FAST RECOVERY RECTIFIER DIODE

FEATURES

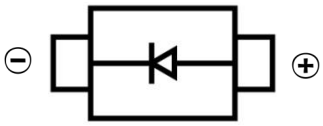
- Low Reverse voltage leakage current
- Glass passivated junction
- High forward surge current capability
- Low forward voltage drop
- Super Fast Recovery Time for High Efficiency
- Surface Mount device



SMAF

MECHANICAL DATA

- Case: SMAF
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Weight: 0.027 grams (approximate)



MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	100	V
DC Blocking Reverse Voltage	V_R	100	V
RMS Reverse Voltage	$V_{R(RMS)}$	70	V
Maximum Average Forward Rectified Current	I_F	0.5	A
Non-Repetitive Peak Forward Surge Current @t=8.3ms	I_{FSM}	20	A
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	105	°C/W
Reverse Recovery Time(@I_F=0.5A, I_R=1.0A, I_{RR}=0.25A)	t_{rr}	35	nS
Junction Temperature	T_J	-55 ~+150	°C
Storage Temperature	T_{STG}	-55 ~+150	°C

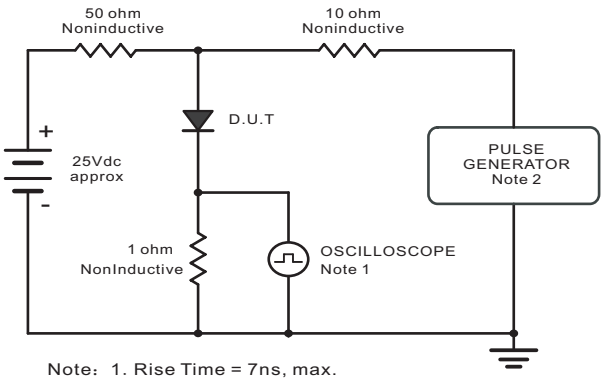
ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Forward voltage	V_F			1.0	V	I_F=0.5A
Reverse current @T_A=25°C	I_R			5	μA	V_R=100V
Reverse current @T_A=125°C	I_R			60	μA	V_R=100V
Diode capacitance	C_D		12		pF	V_R=4V_{DC},f=1MHz

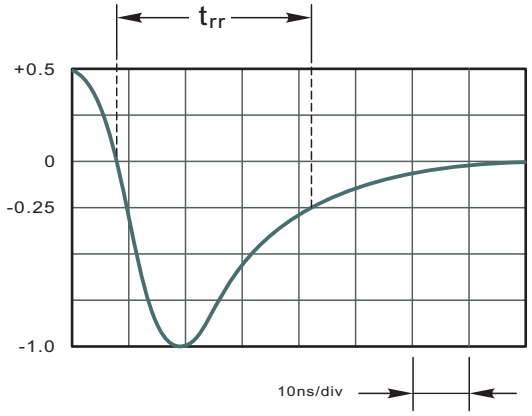
SUPER FAST RECOVERY RECTIFIER DIODE

Typical Characteristics

Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram



Note: 1. Rise Time = 7ns, max.
Input Impedance = 1megohm,22pF.
2. Ries Time =10ns, max.
Source Impedance = 50 ohms.



Set time Base for 10ns/div

Fig.2 Maximum Average Forward Current Rating

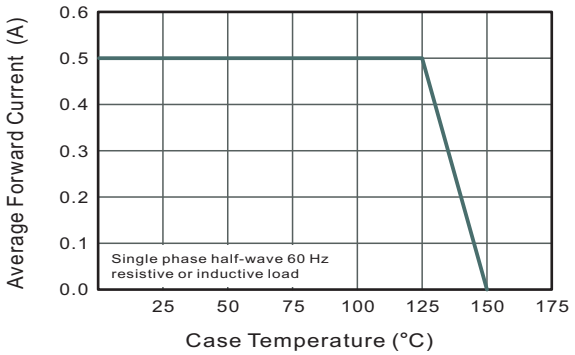


Fig.3 Typical Reverse Characteristics

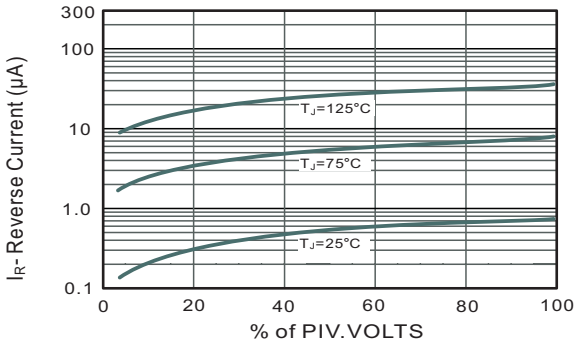


Fig.4 Typical Forward Characteristics

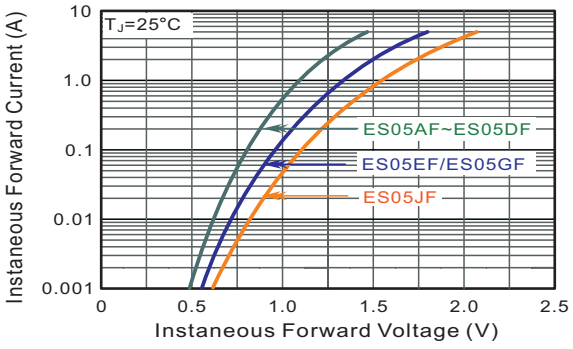


Fig.5 Typical Junction Capacitance

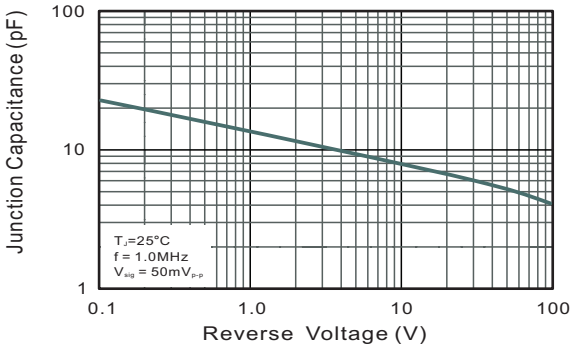
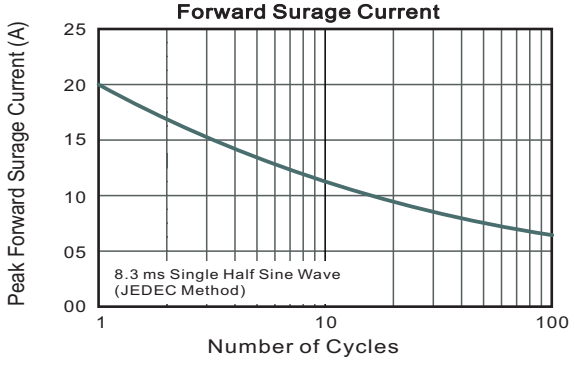
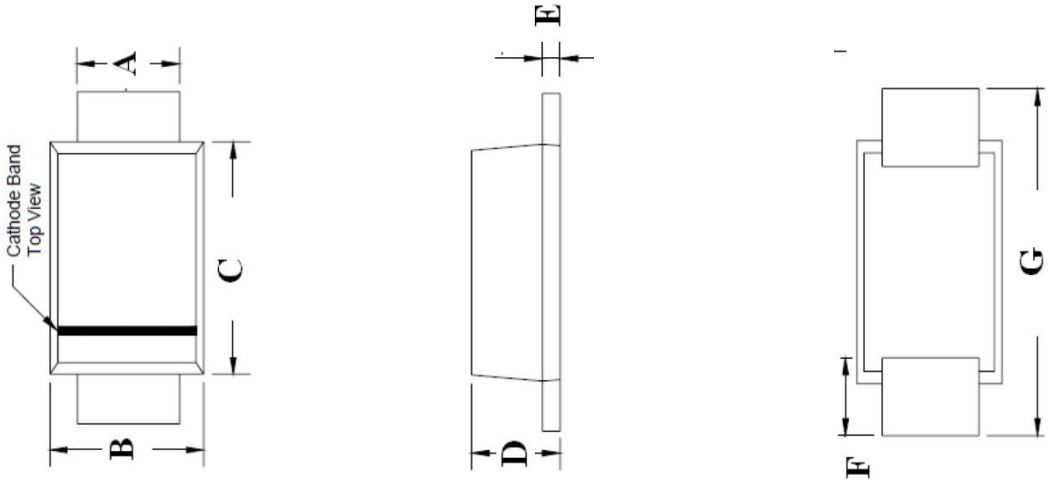


Fig.6 Maximum Non-Repetitive Peak Forward Surage Current



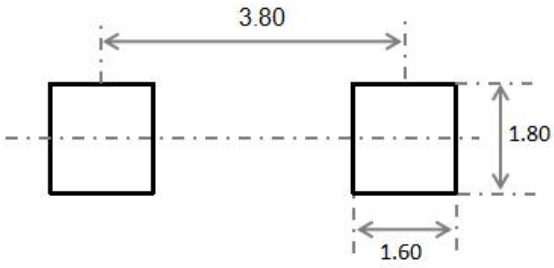
SUPER FAST RECOVERY RECTIFIER DIODE

SMAF Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.30	1.60	0.051	0.063
B	2.40	2.80	0.094	0.110
C	3.25	3.65	0.128	0.144
D	1.10	1.40	0.043	0.055
E	0.15	0.25	0.006	0.010
F	0.70	1.20	0.028	0.047
G	4.40	4.90	0.173	0.193

SMAF Suggested Pad Layout



Note:

1.Controlling dimension: in millimeters

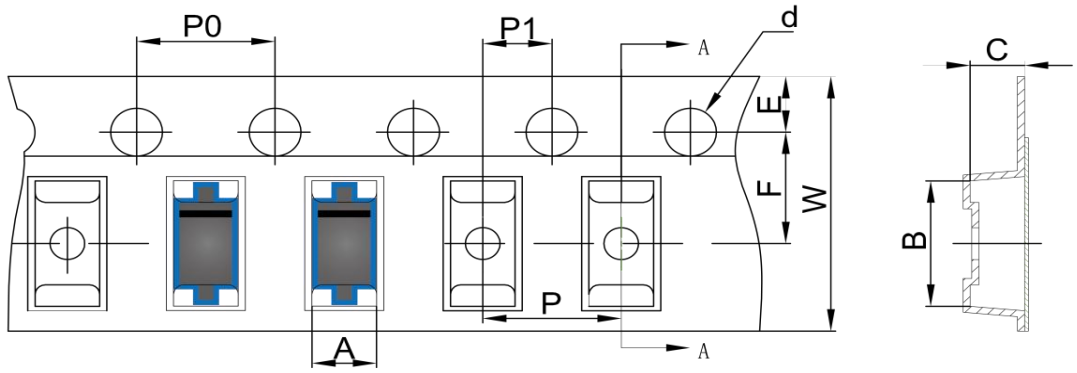
2.General tolerance: ±0.05mm

3.The pad layout is for reference purposes only

SUPER FAST RECOVERY RECTIFIER DIODE

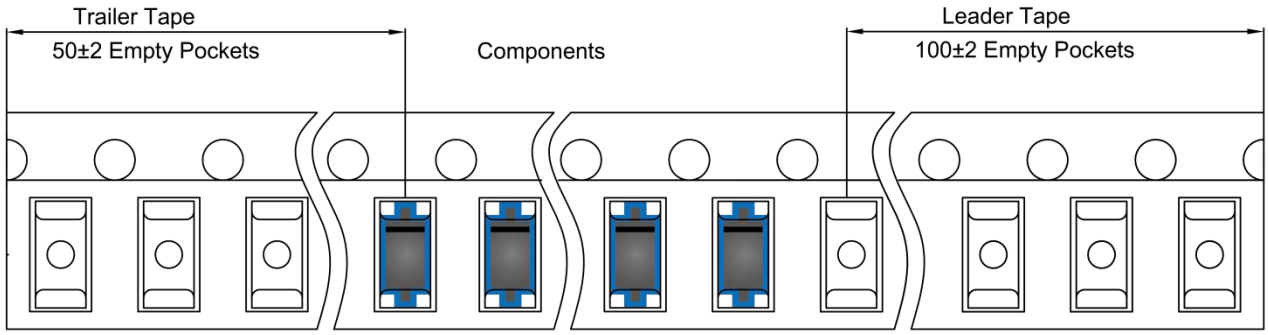
SMAF Tape and Reel

SMAF Embossed Carrier Tape

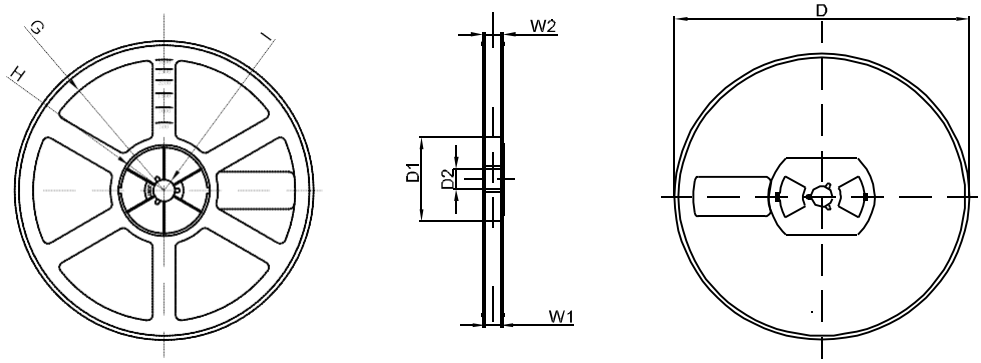


	DIMENSIONS ARE IN MILLIMETER									
TYPE	A	B	C	d	E	F	P0	P	P1	W
SMAF	2.79	5.35	1.48	Ø1.50	1.75	5.50	4.00	4.00	2.00	12.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

SMAF Tape Leader and Trailer



SMAF Reel



	DIMENSIONS ARE IN MILLIMETER							
REEL OPTION	D	D1	D2	G	H	I	W1	W2
7" DIA	Ø178	54.40	13.00	R78	R25.60	R6.50	12.40	17.60
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1