

Surface Mount High Efficient Rectifier

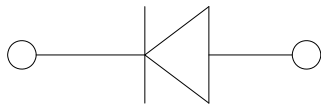


Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- High forward surge capability
- Super fast reverse recovery time
- 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:** SMBF
Molding compound meets UL 94 V-0 flammability rating, -compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

■Maximum Ratings (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	HS3ABF	HS3BBF	HS3DBF	HS3FBF	HS3GBF	HS3JBF	HS3KBF	HS3MBF
Device marking code			HS3ABF	HS3BBF	HS3DBF	HS3FBF	HS3GBF	HS3JBF	HS3KBF	HS3MBF
Maximum Repetitive Peak Reverse Voltage	VRRM	V	50	100	200	300	400	600	800	1000
Maximum RMS Voltage	VRMS	V	35	70	140	210	280	420	560	700
Maximum DC blocking Voltage	VDC	V	50	100	200	300	400	600	800	1000
Average rectified output current @60Hz sine wave, resistance load, TL (Fig.1)	IO	A	3.0							
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave,1 cycle, Tj=25°C	IFSM	A	100							
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, Tj=25°C			200							
Current squared time @1ms≤t≤8.3ms Tj=25°C, Rating of per diode	I²t	A²s	41.5							
Typical junction capacitance @Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	Cj	pF	60			40		24		
Storage temperature	Tstg	°C	-55 ~ +150							
Junction temperature	Tj	°C	-55 ~ +150							

HS3ABF THRU HS3MBF

■Electrical Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	HS3ABF	HS3BBF	HS3DBF	HS3FBF	HS3GBF	HS3JBF	HS3KBF	HS3MBF
Maximum instantaneous forward voltage drop per diode	V _F	V	I _{FM} =3.0A	1.0			1.3		1.7		
Maximum reverse recovery time	t _r	ns	I _F =0.5A, I _R =1.0A, I _{rr} =0.25A	50					75		
Maximum DC reverse current at rated DC blocking voltage per diode	I _R	μA	T _j =25°C	5							
			T _j =125°C	100							

■Thermal Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	HS3ABF	HS3BBF	HS3DBF	HS3FBF	HS3GBF	HS3JBF	HS3KBF	HS3MBF
Typical Thermal resistance	R _{θJ-A} (1)	°C/W	60							
	R _{θJ-L} (1)		20							
	R _{θJ-C} (1)		15							

Note:

(1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.3" x 0.3" (8.0 mm x 8.0 mm) copper pad areas

■ Characteristics (Typical)

FIG.1: I_o-T_L Curve

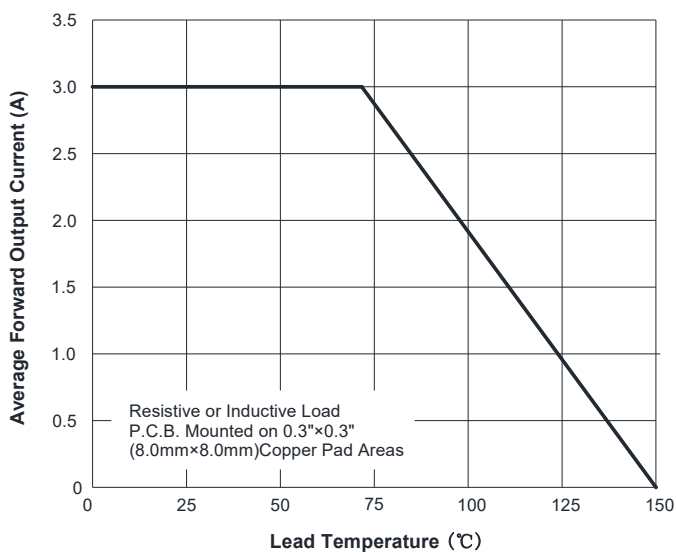
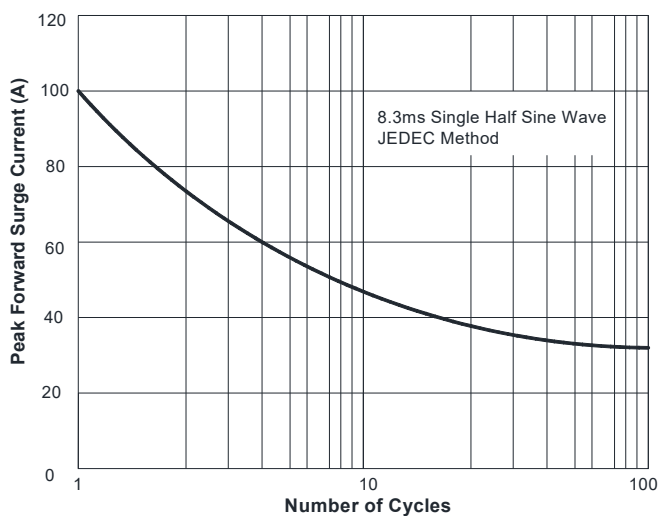


FIG.2: Forward Surge Current Capability



HS3ABF THRU HS3MBF

FIG.3: Typical Forward Voltage

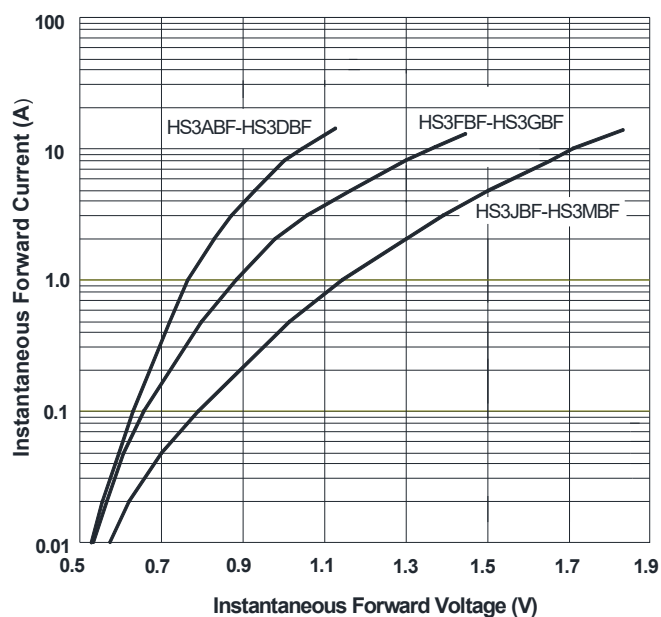


FIG.4: Typical Reverse Characteristics

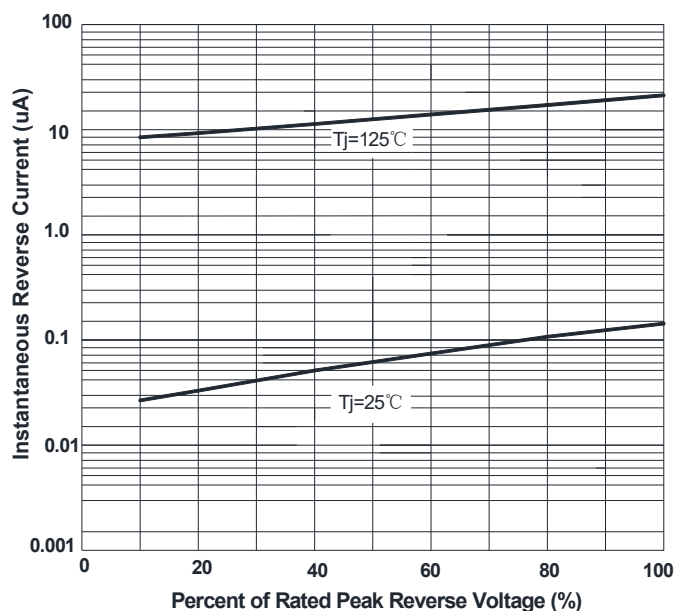
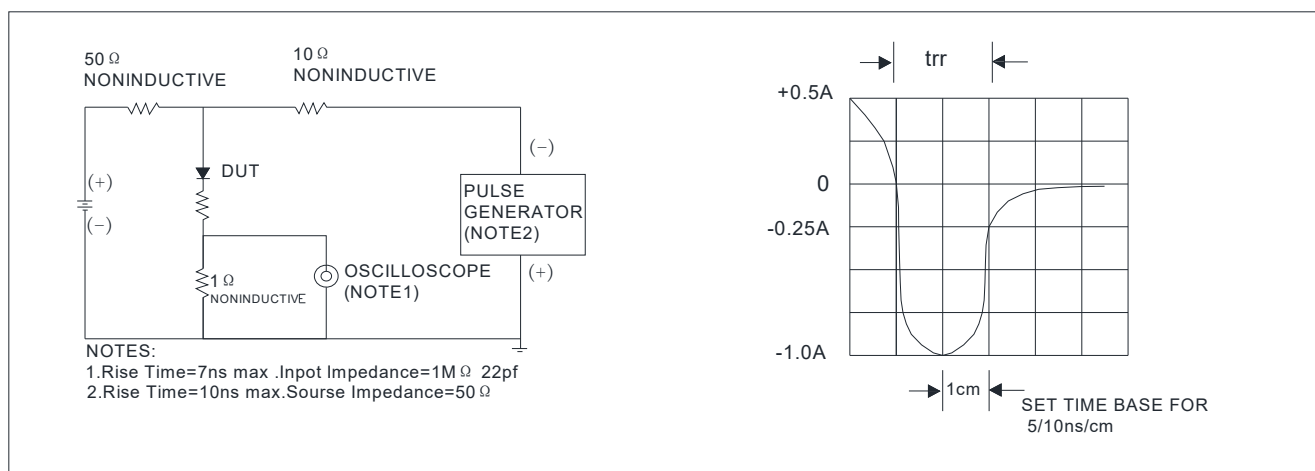


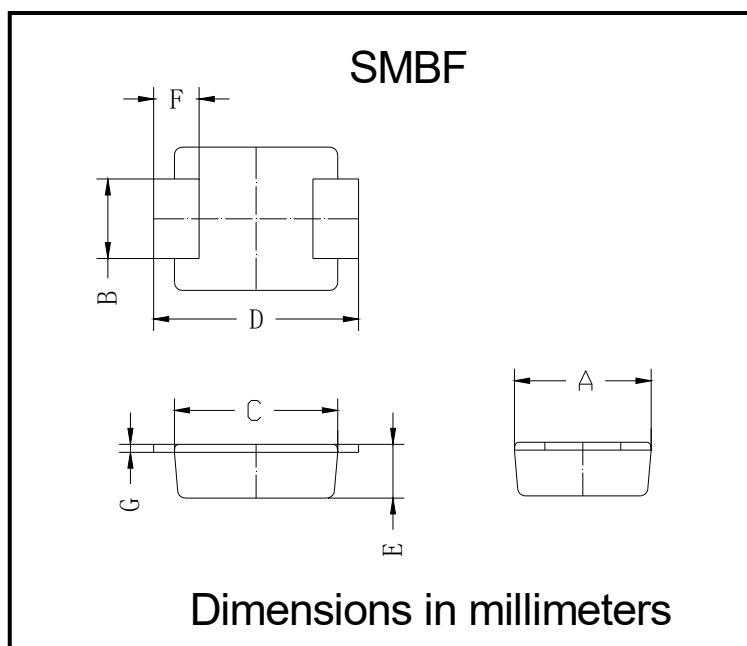
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



■ Ordering Information (Example)

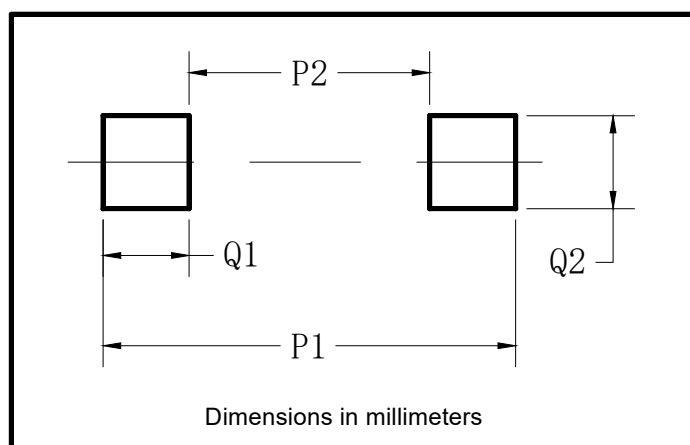
PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
HS3ABF - HS3MBF	F1	Approximate 0.065	5000	/	80000	13" reel

■ Outline Dimensions



SMBF		
Dim	Min	Max
A	3.40	3.80
B	1.90	2.10
C	4.15	4.45
D	5.10	5.60
E	1.05	1.55
F	0.70	1.35
G	0.15	0.25

■ Suggested pad layout



Dim	Milimeters
P1	6.20
P2	2.40
Q1	1.90
Q2	2.20

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