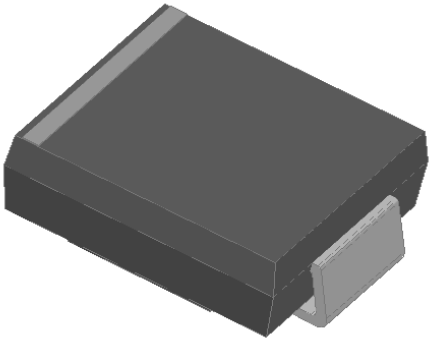
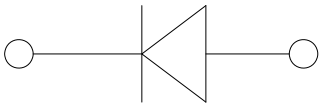
Surface Mount High Efficient Rectifier





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

- **P**ackage: DO-214AB (SMC)

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: Color band denotes the cathode end

■Maximum Ratings (Ta=25℃ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	HS5A	HS5B	HS5D	HS5F	HS5G	HS5J	HS5K	HS5M
Device marking code			HS5A	HS5B	HS5D	HS5F	HS5G	HS5J	HS5K	HS5M
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	V	50	100	200	300	400	600	800	1000
Maximum RMS Voltage	V_{RMS}	V	35	70	140	210	280	420	560	700
Maximum DC blocking Voltage	V_{DC}	V	50	100	200	300	400	600	800	1000
Average Rectified Output Current @60Hz sine wave, Resistance load, TL (FIG.1)	I_O	A	5.0							
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave,1 cycle, Tj=25℃	I_{FSM}	A	150							
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, Tj=25℃			300							
Current squared time @1ms≤t≤8.3ms Tj=25℃	I^2t	A^2s	94							
Storage Temperature	Tstg	℃	-55 ~ +150							
Junction Temperature	Tj	℃	-55 ~ +150							

■Electrical Characteristics (Ta=25℃ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	HS5A	HS5B	HS5D	HS5F	HS5G	HS5J	HS5K	HS5M
Maximum instantaneous forward voltage	VF	V	IFM=5.0A	1.0			1.3		1.7		
Maximum reverse recovery time	t_{rr}	ns	I_F=0.5A,I_R=1.0A, I_{rr}=0.25A	50					75		
Maximum DC reverse current at rated DC blocking voltage	IR	μA	Tj =25℃	5							
			Tj =125℃	100							
Typical junction capacitance	Cj	pF	Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	72			46		52		

■Thermal Characteristics （T_a=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	HS5A	HS5B	HS5D	HS5F	HS5G	HS5J	HS5K	HS5M
Typical Thermal resistance	$R_{\theta J-A}$(1)	℃/W	48							
	$R_{\theta J-L}$(1)		15							
	$R_{\theta J-C}$(1)		12							

Note(1)
Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.6" x 0.6" (16 mm x 16 mm) copper pad areas

■Ordering Information (Example)

PREFERED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
HS5A~HS5M	F1	Approximate 0.254	3000	/	42000	13” reel

■ Characteristics(Typical)

FIG.1: Io-TL Curve

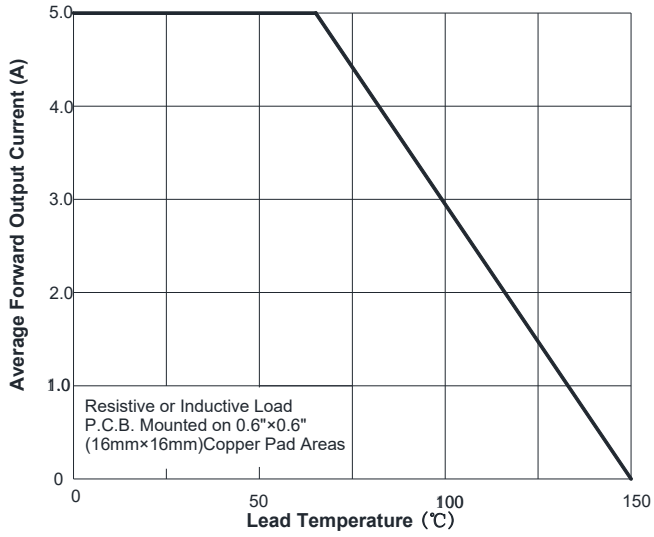


FIG.2: Forward Surge Current Capability

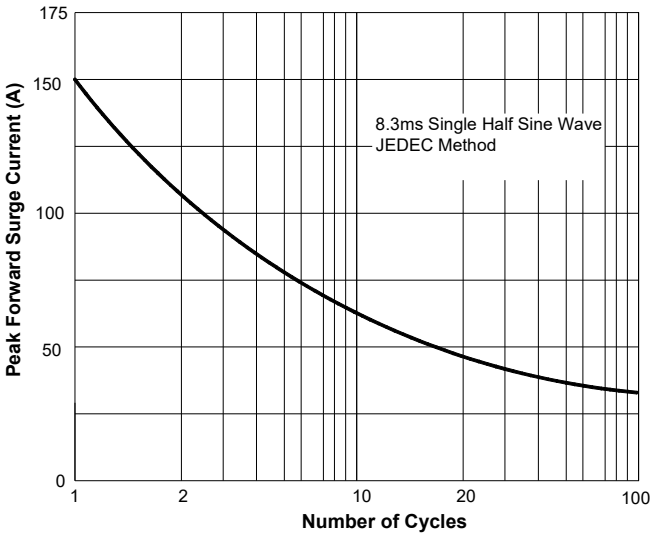


FIG.3: Typical Forward Voltage

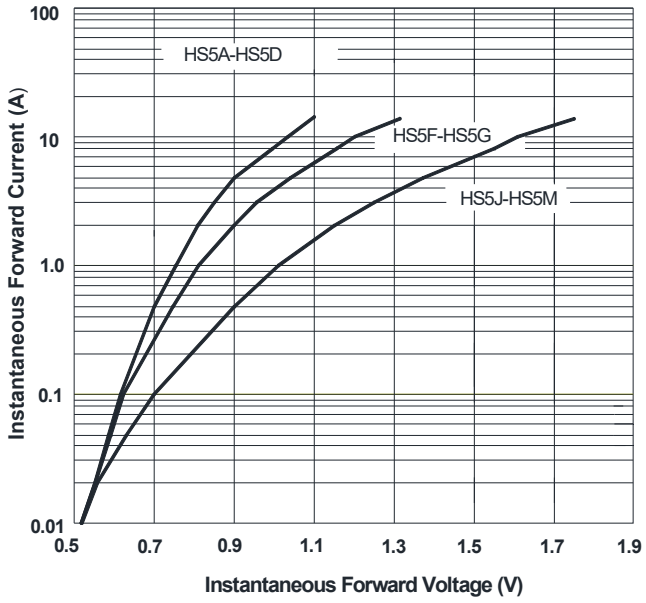


FIG.4: Typical Reverse Characteristics

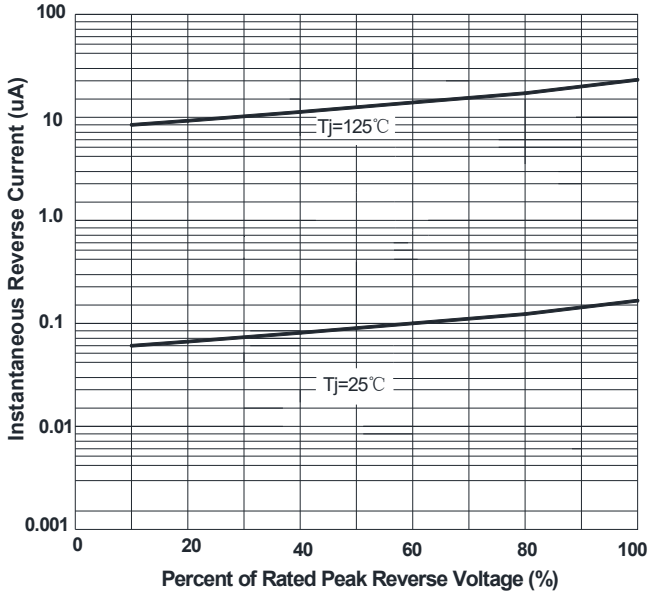
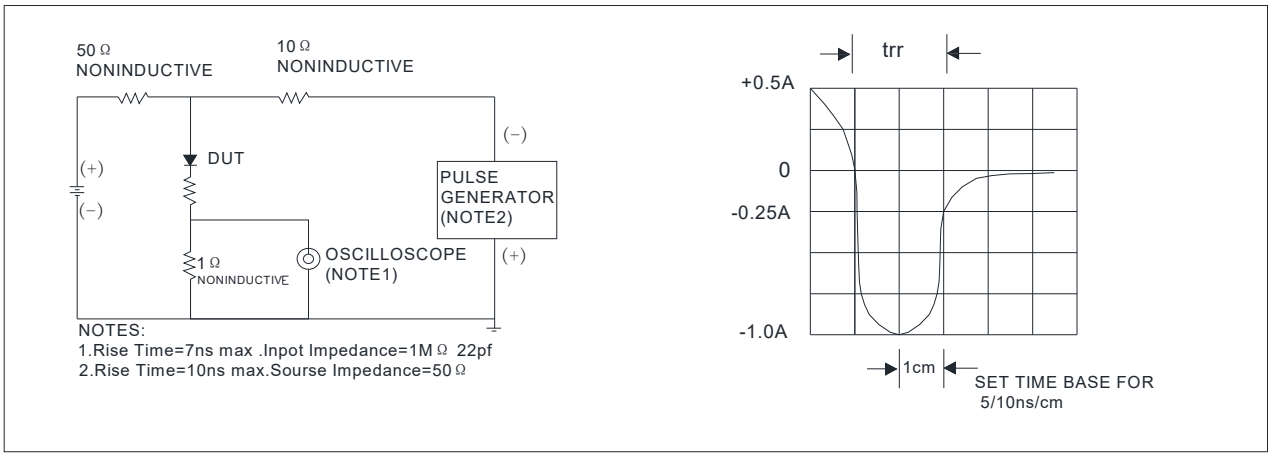
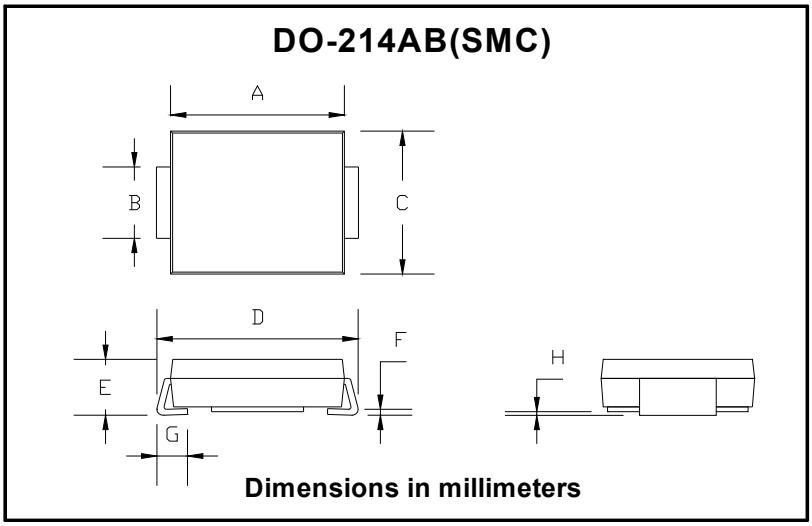


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time

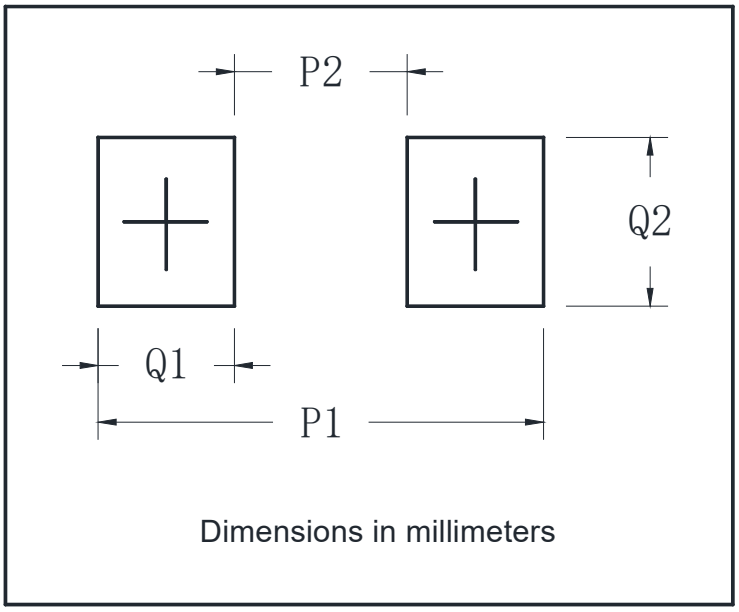


■ Outline Dimensions



DO-214AB (SMC)		
Dim	Min	Max
A	6.60	7.11
B	2.85	3.27
C	5.59	6.22
D	7.75	8.13
E	1.99	2.61
F	0.15	0.31
G	0.76	1.52
H	0.05	0.20

■ Suggested pad layout



DO-214AB (SMC)	
Dim	Min
P1	9.9
P2	3.84
Q1	3.03
Q2	3.82

Disclaimer

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