SAMYANG ELECTRONICS

ES5A --- ES5J

SUPER FAST RECTIFIERS

VOLTAGE RANGE: 50 --- 600 V
CURRENT: 5.0A

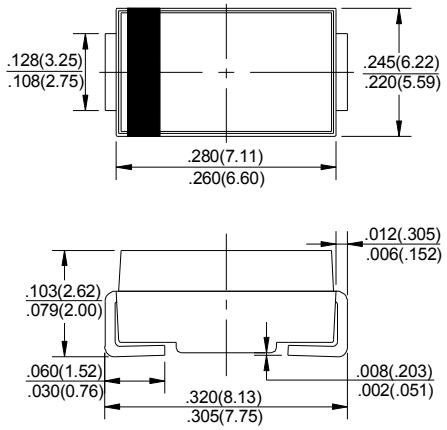
Features
- Ultrafast reverse recovery time
- Low leakage current
- Low switching losses, high efficiency
- High forward surge capability
- Solder dip 260°C max. 10 s, per JESD 22-B106

Typical Applications
For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer and telecommunication.

Mechanical Data
- Package: DO-214AB (SMC)

Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- Polarity: Color band denotes the cathode end

SMC



Dimensions in inches and (millimeters)

■Maximum Ratings (Ta=25 Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	ES5A	ES5B	ES5C	ES5D	ES5F	ES5G	ES5H	ES5J
Device marking code			ES5A	ES5B	ES5C	ES5D	ES5F	ES5G	ES5H	ES5J
Repetitive Peak Reverse Voltage	V_{RRM}	V	50	100	150	200	300	400	500	600
Average Rectified Output Current @60Hz sine wave, Resistance load, Ta (FIG.1)	I_O	A	5.0							
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave,1 cycle, Ta=25℃	I_{FSM}	A	150							
Storage Temperature	Tstg	℃	-55 ~+150							
Junction Temperature	Tj	℃	-55 ~+150							

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

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	ES5A	ES5B	ES5C	ES5D	ES5F	ES5G	ES5H	ES5J
Maximum instantaneous forward voltage drop per diode	V_F	V	I_{FM}=5.0A	0.95				1.3		1.7	
Maximum reverse recovery time	T_{RR}	ns	I_F=0.5A,I_R=1.0A, Irr=0.25A	35							
Maximum DC reverse current at rated DC blocking voltage per diode	I_R	μA	Ta=25℃	10							
			Ta=100℃	500							
Typical junction capacitance	Cj	pF	Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C.	80				40			

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

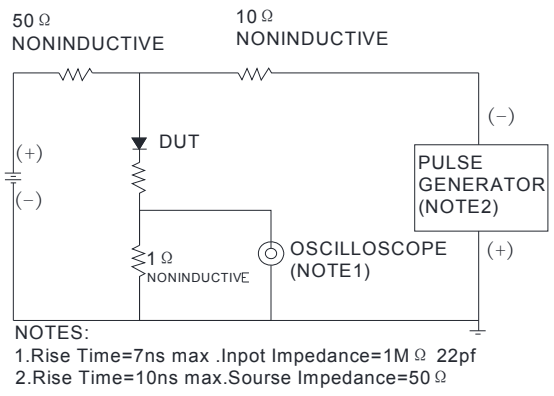
PARAMETER		SYMBOL	UNIT	ES5A	ES5B	ES5C	ES5D	ES5F	ES5G	ES5H	ES5J
Thermal Resistance	Junction to ambient	$R_{\theta J-A}$	℃/W	45[1)]							
	Junction to lead	$R_{\theta J-L}$		12[1)]							
	Junction to case	$R_{\theta J-c}$		6.5[1)]							

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
ES5A~ES5J	F1	Approximate 0.254	3000	6000	42000	13” reel

Diagram of circuit and Testing wave form of reverse recovery time



NOTES:
1.Rise Time=7ns max .Inpot Impedance=1MΩ 22pf
2.Rise Time=10ns max.Sourse Impedance=50Ω

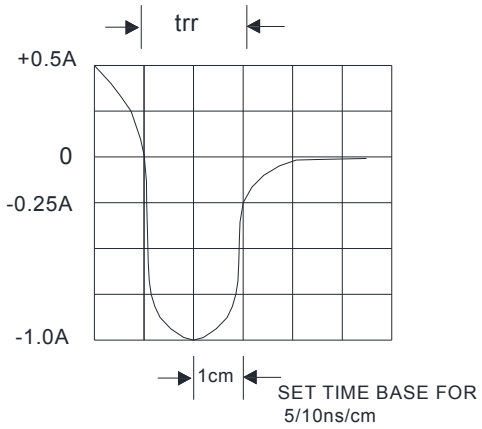


FIG.1: Io-TL Curve

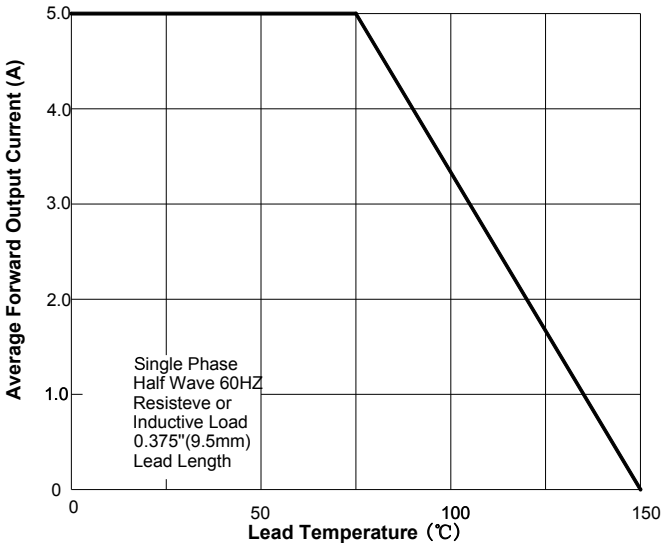


FIG.2: Forward Surge Current Capability

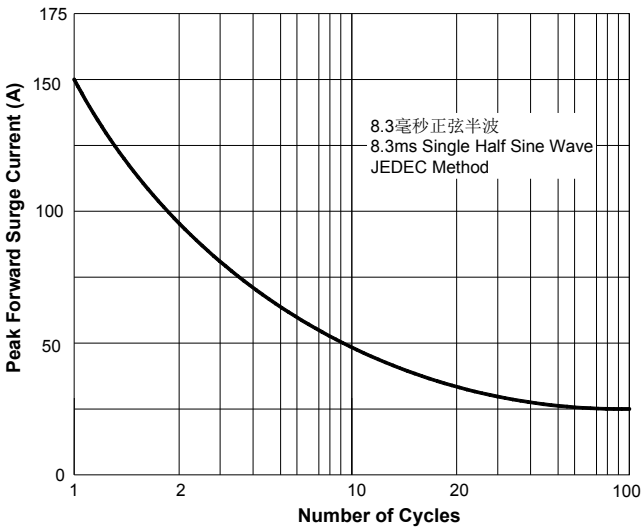


FIG.3: Forward Voltage

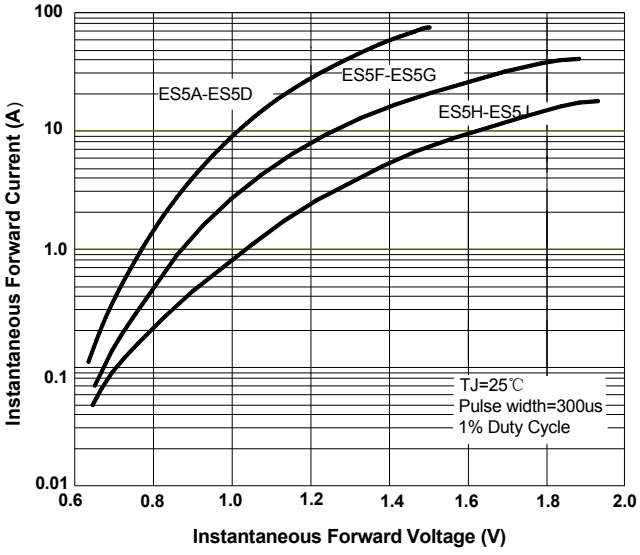


FIG.4: Typical Reverse Characteristics

