R

SURFACE MOUNT SUPER FAST RECOVERY RECTIFIER REVERSE VOLTAGE 50 to 600 Volts FORWARD CURRENT 1.0 Ampere

SMAF

FEATURES

Plastic package has underwrites laboratory flammability Classification 94V-0 Glass passivated chip junction Built-in strain relief Super Fast switiching speed for high efficiency High temperature soldering guaranteed 250°C/10 second

MECHANICAL DATA

Case: Transfer molded plastic Terminals: Solder plated, Solderable per MIL-STD-750, Method 2026 Polarity: Color band denotes cathode end Weight: 0.002ounce, 0.064 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25℃ ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load.

Dimensions in inches and (millimeters)

039(1.0)

1- Thermal resistance from Junction to ambient and from junction to lead mounted on P.C.B. with 0.2 × 0.2" (5.0 × 5.0mm) copper pad areas.

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Fax: (852) 8106 7099 Website: www.kingtronics.com Email: info@kingtronics.com Tel: (852) 8106 7033

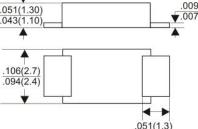
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For capacitive load derate current by 20%												
	SYMBOL	ES1A	ES1B	ES1C	ES1D	ES1E	ES1G	ES1J	UNIT			
Maximum Repetitive Peak Reverse Voltage		50	100	150	200	300	400	600	VOLTS			
Maximum RMS Voltage		35	70	105	140	210	280	420	VOLTS			
Maximum DC Blocking Voltage		50	100	150	200	300	400	600	VOLTS			
Maximum Average Forward Rectified CurrentAt $T_A = 55^{\circ}C$ Peak Forward Surge Current 8.3ms single half sine-wavesuperimposed on rated load (JEDEC Method)Maximum instantaneous forward voltage per at 1.0A		1.0						Amps				
		30						Amps				
		0.95 1.25 1.7						VOLTS				
T _A =25℃	la la	5.0 100						– uA				
T _A =125℃	IR											
Maximum Reverse Recovery Time Test conditions I _F =0.5A, I _R =1.0A, I _{RR} =0.25A		35					nS					
Typical Junction Capacitance (Measured at 1.0MHz and applied reverse voltage of 4.0V)		10			8		pF					
Typical Thermal Resistance (Note 1)		88						°CW				
		28										
Operating Junction Temperature		-55 to +150						°C				
Storage Temperature Rang		-55 to +150						°C				
	current by 20% everse Voltage ge iffied Current ms single half sine-wave DEC Method) voltage per at 1.0A $T_A=25^{\circ}C$ $T_A=125^{\circ}C$ Time 0A, I _{RR} =0.25A (Measured at 1.0MHz and V) Note 1)	current by 20%SYMBOLAverse Voltage V_{RMM} averse Voltage V_{RMS} ge V_{DC} ified Current $I_{(AV)}$ ms single half sine-wave DEC Method)IFSMvoltage per at 1.0A V_F $T_A=25^{\circ}C$ I_R $T_A=125^{\circ}C$ I_R Time 0A, $I_{RR}=0.25A$ t_{rr} (Measured at 1.0MHz and V) C_J Note 1)ReJA	current by 20%SYMBOLES1Aeverse Voltage V_{RM} 50 V_{RMS} 35 V_{RMS} 35ge V_{DC} 50 V_{DC} 50ified Current $I_{(AV)}$ $I_{(AV)}$ I_{SM} ms single half sine-wave DEC Method) I_{FSM} I_{FSM} voltage per at 1.0A V_F I_{RSM} $T_A=25^{\circ}C$ I_R I_R $T_A=25^{\circ}C$ I_R I_R Time 0A, $I_{RR}=0.25A$ t_{rr} I_R (Measured at 1.0MHz and V) C_J R_{BJA} Note 1) R_{BJL} I_R ure T_J I_R	Current by 20%SYMBOLES1AES1BEverse Voltage V_{RRM} 50100 V_{RMS} 3570ge V_{DC} 50100ified Current $I_{(AV)}$ $I_{(AV)}$ ms single half sine-wave DEC Method)IFSM I_{FSM} voltage per at 1.0A V_F $O.$ $T_A=25^{\circ}C$ I_R I_R $T_A=25^{\circ}C$ I_R I_R Time OA, I_{RR}=0.25A t_{rr} I_r (Measured at 1.0MHz and V) C_J 1 Note 1) $R_{\Theta JA}$ $R_{\Theta JA}$ ure T_J I_R	current by 20%SYMBOLES1AES1BES1Ceverse Voltage V_{RM} 50100150 V_{RMS} 3570105je V_{DC} 50100150ified Current $I_{(AV)}$ V_{DC} 50100150ified Current $I_{(AV)}$ I_{FSM} V_{F} 0.95 voltage per at 1.0A V_{F} 0.95 $T_{A}=25^{\circ}C$ I_{R} $T_{A}=25^{\circ}C$ I_{R} I_{R} I_{R} $OA, I_{RR}=0.25A$ t_{rr} I_{rr} I_{rr} (Measured at 1.0MHz and V) C_{J} 10 I_{O} Note 1) R_{0JA} I_{R} I_{R} ure T_{J} I_{rr} I_{rr}	Current by 20% SYMBOL ES1A ES1B ES1C ES1D everse Voltage V_{RRM} 50 100 150 200 V_{RMS} 35 70 105 140 ge V_{RMS} 35 70 105 140 ge V_{DC} 50 100 150 200 ified Current $I_{(AV)}$ -50 100 150 200 ms single half sine-wave I_{FSM} -50 100 150 200 voltage per at 1.0A V_F 0.95 -10 -50 -10 T_A=25°C I_R I_R -50 -50 -100 Time $0.25A$ t_{rr} 35 -50 -50 -50 (Measured at 1.0MHz and V) C_J -10 -55 -55 to +16 Note 1) R_{0JL} -55 to +16 -55 -55 to +16	Current by 20% SYMBOL ES1A ES1B ES1C ES1D ES1E everse Voltage V_{RM} 50 100 150 200 300 ge V_{RMS} 35 70 105 140 210 ge V_{DC} 50 100 150 200 300 ified Current $I_{(AV)}$ V_{DC} 50 100 150 200 300 ms single half sine-wave $I_{(AV)}$ I_{FSM} I_{C} I_{O}	Current by 20% SYMBOL ES1A ES1B ES1C ES1D ES1E ES1G werse Voltage VRRM 50 100 150 200 300 400 Werse Voltage VRMS 35 70 105 140 210 280 ye VDc 50 100 150 200 300 400 iffied Current I I 100 150 200 300 400 voltage per at 1.0A VF 0.95 1.25 1.25 1.25 1.25 T_A=125°C IR IR 10 35 5.0 1.25 1.0 8 V) AReJA ReJA <	Current by 20% SYMBOL ES1A ES1B ES1C ES1D ES1E ES1G ES1J vverse Voltage V_{RRM} 50 100 150 200 300 400 600 V_{RMS} 35 70 105 140 210 280 420 je V_{DC} 50 100 150 200 300 400 600 iffied Current $I_{(AV)}$ U_{DC} 50 100 150 200 300 400 600 iffied Current $I_{(AV)}$ U_{DC} 50 100 150 200 300 400 600 voltage per at 1.0A V_F 0.95 1.25 1.7 $T_A=25^{\circ}C$ I_R 100 T_T $T_A=125^{\circ}C$ I_R $I_$			

.146(3.7) .130(3.3) 063(1 051(1.3 .193(4.9) .173(4.4) .009(0.23) .051(1.30) .043(1.10)

ES1A THRU



R

RATINGS AND CHARACTERISTIC CURVES

PEAK FORWARD SURGE

INSTANTANEOUS REVERSE CURRENT,

(HA)

30

10

100

10

1.0

0.1

100

NONINDUCTIVE

1 magohm. 22pF

NDUCTIVE

50 ohms

0

20

PULSE

ENERATIO

(NOTE 2)

OSCILLOSCOPE (NOTE 1)

2.Rise time=10ns max. Source Impedance=

40

F1G.6-TEST CIRCUIT DIAGRAM AND

REVERSE RECOVERY TIME CHARACTERISTIC

(A)

CURRENT, 20

ES1A THRU ES1.

FIG.2-MAXIMUM NON-REPETITIVE PEAK

gle Half

(ethod) T

FORWARD SURGE CURRENT

JEDEC

10

NUMBER OF CYCLES AT 60 Hz

T = 125°C

80

PERCENT OF RATED PEAK

REVERSE VOLTAGE,(%)

+0.5/

0

-0.25/

-1.0A

=25%

100

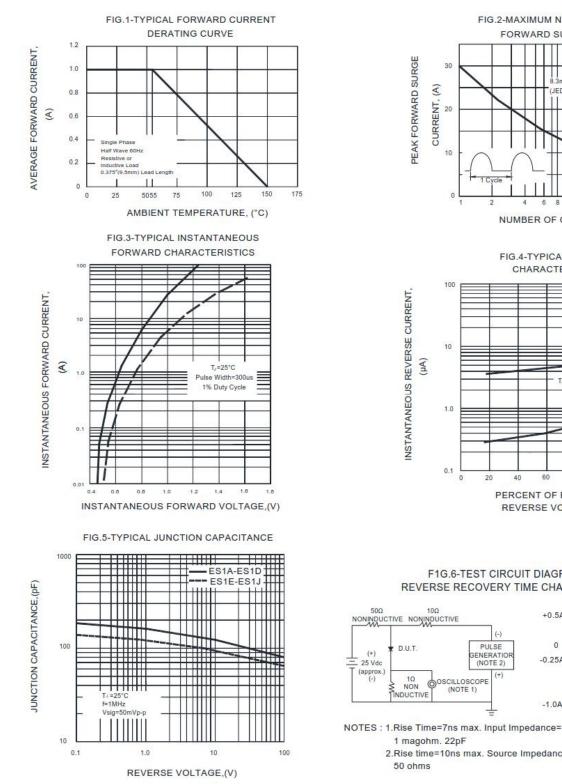
140

SET TIME BASE FOR

50/100ns/cm

120

FIG.4-TYPICAL REVERSE CHARACTERISTICS



Note: Specifications are subject to change without notice.

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