DC COMPONENTS CO., LTD.

RECTIFIER SPECIALISTS

ES2ABF THRU ES2JBF

TECHNICAL SPECIFICATIONS OF SUPER FAST RECOVERY RECTIFIER

VOLTAGE RANGE - 50 to 600 Volts

CURRENT - 2.0 Amperes

FEATURES

* Ideal for surface mounted applications
* Low leakage current
* Glass passivated junction
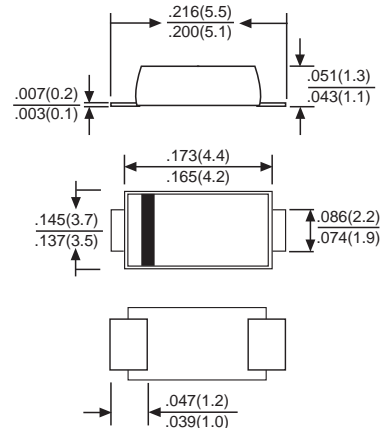* High efficiency
* Superfast reverse recovery time

MECHANICAL DATA

* Case: Molded plastic
* Epoxy: UL 94V-0 rate flame retardant
* Terminals: Solder plated, solderable per
  MIL-STD-750, Method 2026
* Polarity: As marked
* Mounting position: Any
* Weight: 0.03 gram

SMBFL

Dimension	inches	(millimeters)
	.216	(5.5)
	.200	(5.1)
	.051	(1.3)
	.043	(1.1)
	.007	(0.2)
	.003	(0.1)
	.173	(4.4)
	.165	(4.2)
	.145	(3.7)
	.137	(3.5)
	.086	(2.2)
	.074	(1.9)
	.047	(1.2)
	.039	(1.0)

Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

	SYMBOL	ES2ABF	ES2BBF	ES2CBF	ES2DBF	ES2EBF	ES2GBF	ES2JBF	UNITS
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	150	200	300	400	600	Volts
Maximum RMS Voltage	V_{RMS}	35	70	105	140	210	280	420	Volts
Maximum DC Blocking Voltage	V_{DC}	50	100	150	200	300	400	600	Volts
Maximum Average Forward Rectified Current at T_A = 75 °C	I_O				2.0				Amps
Peak Forward Surge Current I_{FM}(surge): 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	I_{FSM}				50				Amps
Maximum Forward Voltage at 2.0A DC	V_F			0.95			1.25	1.7	Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage @T_A = 25°C	I_R				5.0				µAmps
@T_A = 125°C					100				
Maximum Reverse Recovery Time (Note 1)	t_{rr}				35				nSec
Typical Thermal Resistance (Note 2)	$R_{\theta JA}$				65				°C/W
Typical Junction Capacitance (Note 3)	C_j				45				pF
Operating and Storage Temperature Range	T_J, T_{STG}				-55 to +150				°C

NOTES : 1. Test Conditions: IF=0.5A, IR=1.0A, IRR=0.25A.

2. P.C.B. mounted with 0.5x0.5 in^2 (12.7x12.7mm^2) copper pads to each terminal.

3. Measured at 1.0 MHz and applied reverse voltage of 4.0 VDC.

RATING AND CHARACTERISTIC CURVES (ES2ABF THRU ES2JBF)

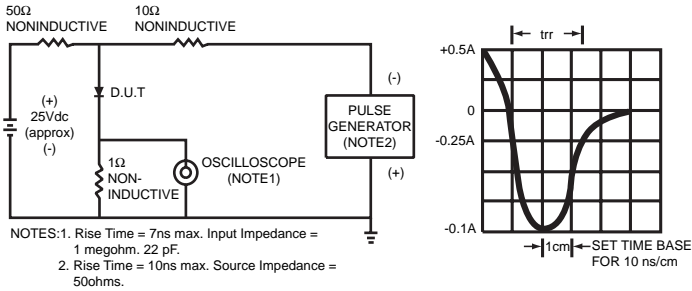FIG. 1 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY
TIME CHARACTERISTIC

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

FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD
SURGE CURRENT

8.3ms Single Half Sine-Wave
(JEDEC Method)

PEAK FORWARD SURGE CURRENT, (A)

NUMBER OF CYCLES AT 60Hz
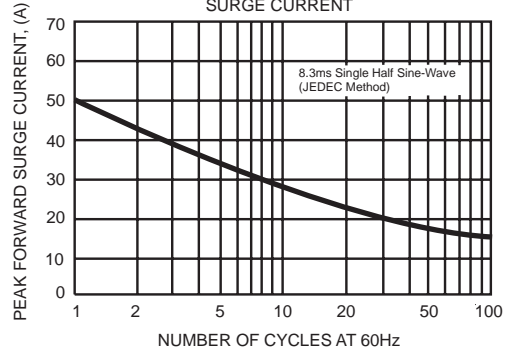
FIG. 3 - TYPICAL FORWARD
CURRENT DERATING CURVE

Single Phase
Half Wave 60Hz
Resistive or
Inductive Load

AVERAGE FORWARD CURRENT, (A)

AMBIENT TEMPERATURE (^{O}C)
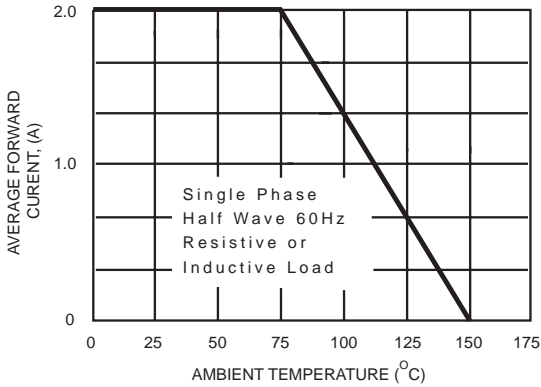
FIG. 4 - TYPICAL INSTANTANEOUS
FORWARD CHARACTERISTICS

$T_J = 25^{O}$C

ES2ABF~ES2DBF

ES2EBF-ES2GBF

ES2JBF

Pulse Width = 300μS
1% Duty Cycle

INSTANTANEOUS FORWARD CURRENT, (A)

INSTANTANEOUS FORWARD VOLTAGE, (V)
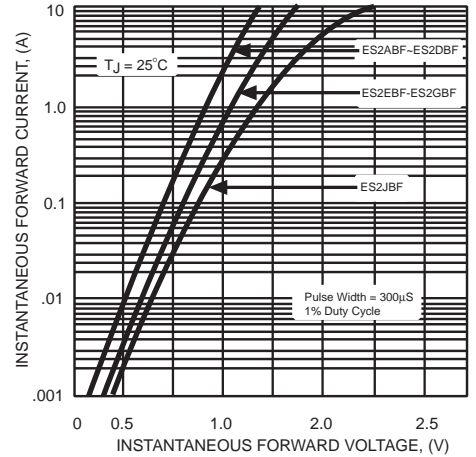
FIG. 5 - TYPICAL REVERSE CHARACTERISTICS

$T_J = 125^{O}$C

$T_J = 75^{O}$C

$T_J = 25^{O}$C

INSTANEOUS REVERSE CURRENT (μA)

RATED PEAK REVERSE VOLTAGE (%)

FIG. 6 - TYPICAL JUNCTION CAPACITANCE

$T_J = 25^{O}$C

JUNCTION CAPACITANCE, (pF)

REVERSE VOLTAGE, (V)
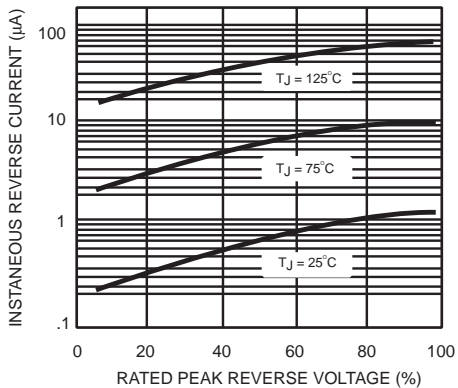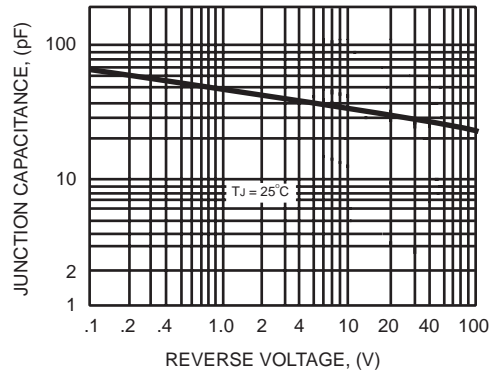
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