MURS120

SURFACE MOUNT ULTRA FAST RECTIFIER

PRV : 200 Volts
Io : 1.0 Ampere

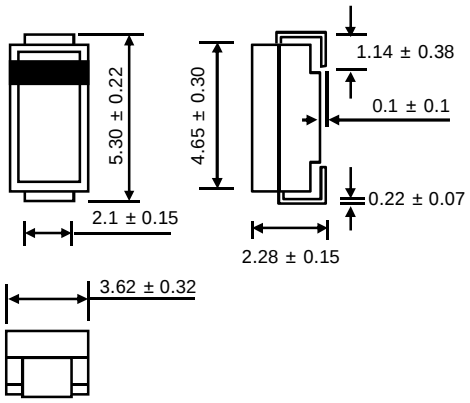
FEATURES :

* High current capability
* High surge current capability
* High reliability
* Low reverse current
* Low forward voltage drop
* Super Fast Recovery Time
* Pb / RoHS Free

MECHANICAL DATA :

* Case : SMB Molded plastic
* Epoxy : UL94V-O rate flame retardant
* Lead : Lead Formed for Surface Mount
* Polarity : Color band denotes cathode end
* Mounting position : Any
* Weight : 0.093 gram

SMB (DO-214AA)



Dimensions in millimeters

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 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%.

RATING	SYMBOL	VALUE	UNIT
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	200	V
Maximum Working Reverse Voltage	V_{RWM}	200	V
Maximum DC Blocking Voltage	V_{DC}	200	V
Maximum Average Forward Current T_L = 155 °C	$I_{F(AV)}$	1.0	A
Maximum Peak Forward Surge Current (Surge applied at rated load conditions, half wave, single phase)	I_{FSM}	40	A
Maximum Forward Voltage at I_F = 1 A (Note 1)	V_F	0.875	V
Maximum Reverse Current at T_J = 25 °C	I_R	2.0	µA
Rated DC Blocking Voltage T_J = 150 °C	$I_{R(H)}$	50	µA
Maximum Reverse Recovery Time (Note 2)	Trr	30	ns
Junction Temperature Range	T_J	- 65 to + 175	°C
Storage Temperature Range	T_{STG}	- 65 to + 175	°C

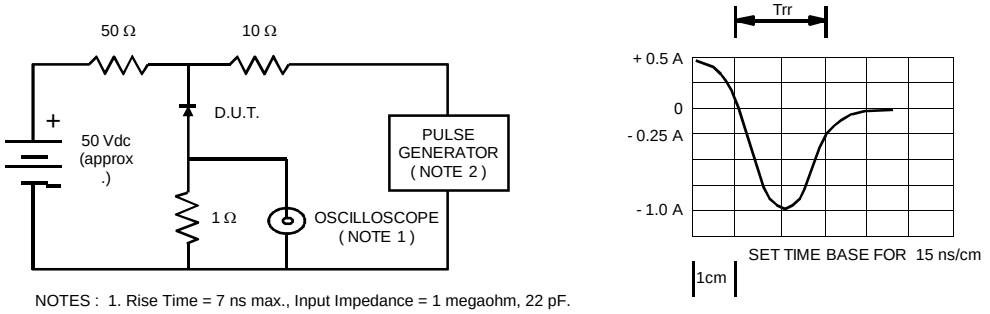
Notes :

(1) Pulse Test : Pulse Width = 300 µs, Duty Cycle ≤ 2.0%

(2) Reverse Recovery Test Conditions : I_F = 0.5A, I_R = 1A ; Irr = 0.25 A

RATING AND CHARACTERISTIC CURVES (MURS120)

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



NOTES : 1. Rise Time = 7 ns max., Input Impedance = 1 megaohm, 22 pF.
2. Rise Time = 10 ns max., Source Impedance = 50 ohms.
3. All Resistors = Non-inductive Types.

FIG.2 - DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

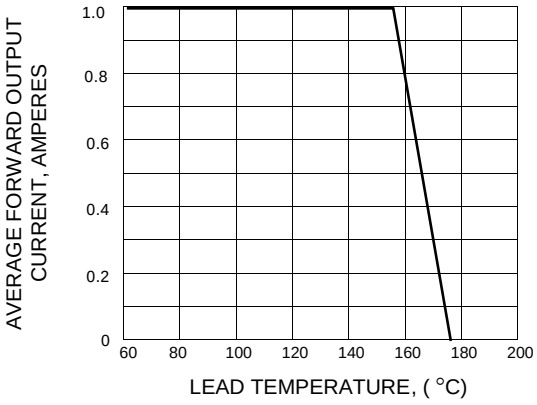


FIG.3 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

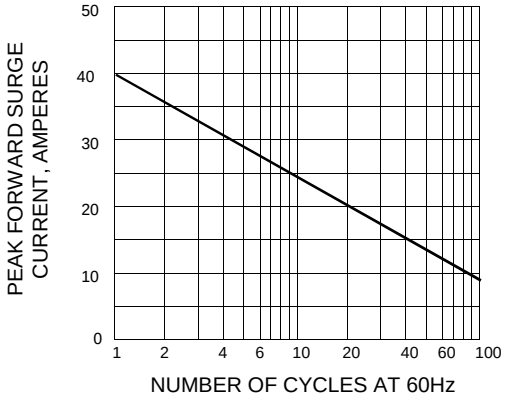


FIG.4 - TYPICAL FORWARD CHARACTERISTICS

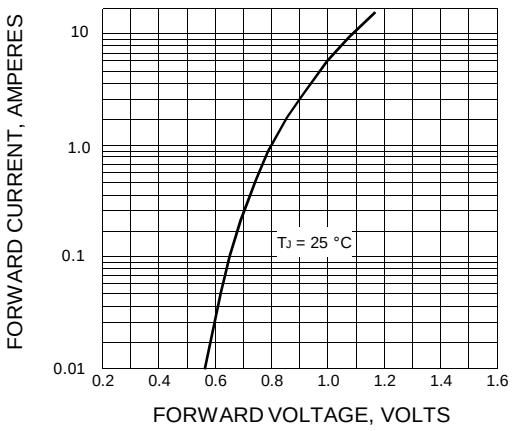
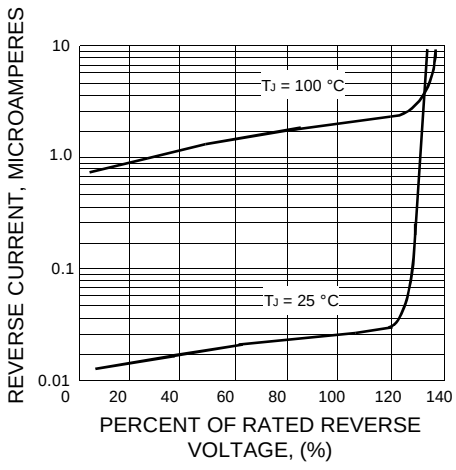


FIG.5 - TYPICAL REVERSE CHARACTERISTICS



MURS140

SURFACE MOUNT ULTRA FAST RECTIFIERS

PRV : 400 Volts
Io : 1.0 Ampere

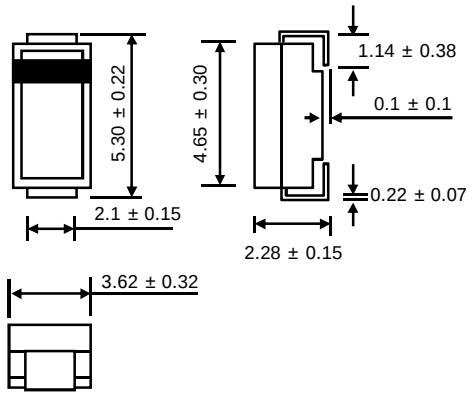
FEATURES :

* High surge current capability
* High reliability
* Low reverse current
* Low forward voltage drop
* Ultra Fast Recovery Time
* Pb / RoHS Free

MECHANICAL DATA :

* Case : SMB Molded plastic
* Epoxy : UL94V-O rate flame retardant
* Lead : Lead Formed for Surface Mount
* Polarity : Color band denotes cathode end
* Mounting position : Any
* Weight : 0.093 gram

SMB (DO-214AA)



Dimensions in millimeters

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 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%.

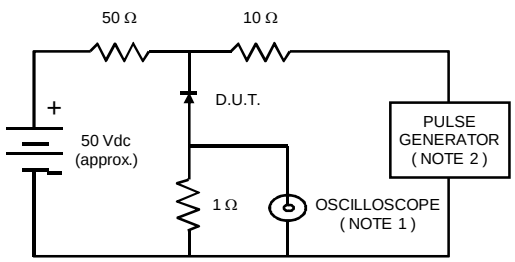
RATING		SYMBOL	VALUE	UNIT
Maximum Repetitive Peak Reverse Voltage		V_{RRM}	400	V
Maximum Working Peak Reverse Voltage		V_{RWM}	400	V
Maximum DC Blocking Voltage		V_{DC}	400	V
Maximum Average Forward Current T_L = 150 °C See Fig. 1 T_L = 125 °C		$I_{F(AV)}$	1.0 2.0	A
Maximum Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)		I_{FSM}	35	A
Maximum instantaneous Forward Voltage (1)	at I_F = 1.0A , T_J = 25 °C	V_F	1.25	V
	at I_F = 1.0A , T_J = 150 °C		1.05	
Maximum Instantaneous Reverse Current at Rated DC Blocking Voltage(1)	T_J = 25°C	I_R	5	μA
	T_J = 150 °C	$I_{R(H)}$	150	μA
Maximum Reverse Recovery Time (2)		Trr	50	ns
Operating Junction and Storage Temperature Range		T_J, T_{STG}	- 65 to + 175	°C

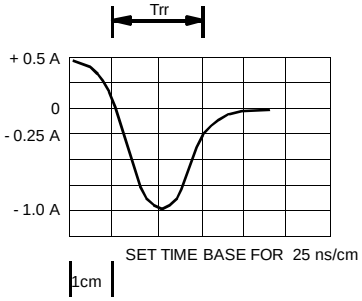
Notes :

(1) Pulse Test : Pulse Width = 300 μs, Duty Cycle ≤ 2.0%
(2) Reverse Recovery Test Conditions : I_F = 0.5A, I_R = 1A ; Irr = 0.25 A

RATING AND CHARACTERISTIC CURVES (MURS140)

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





NOTES : 1. Rise Time = 7 ns max., Input Impedance = 1 megaohm, 22 pF.
2. Rise Time = 10 ns max., Source Impedance = 50 ohms.
3. All Resistors = Non-inductive Types.

FIG.2 - DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

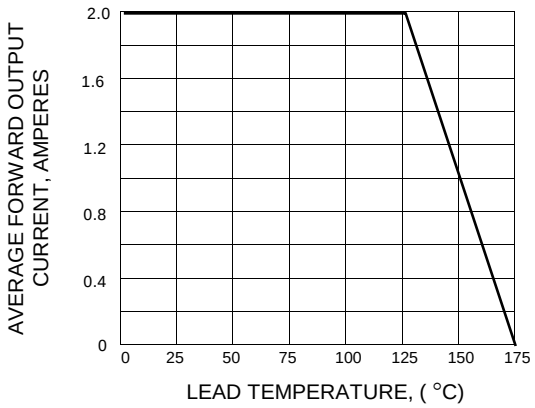


FIG.3 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

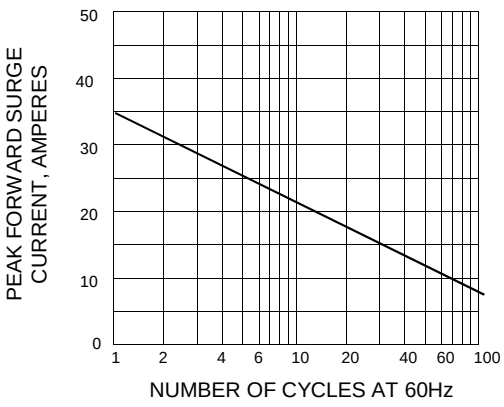


FIG.4 - TYPICAL FORWARD CHARACTERISTICS

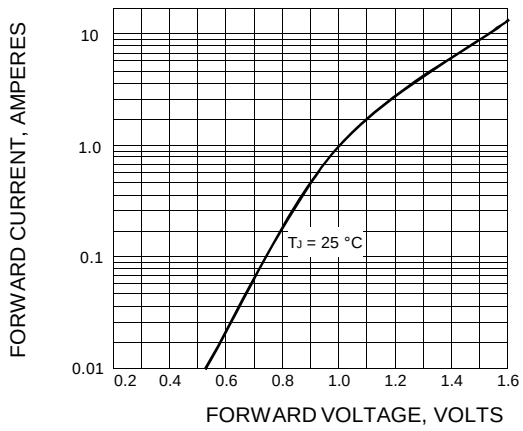
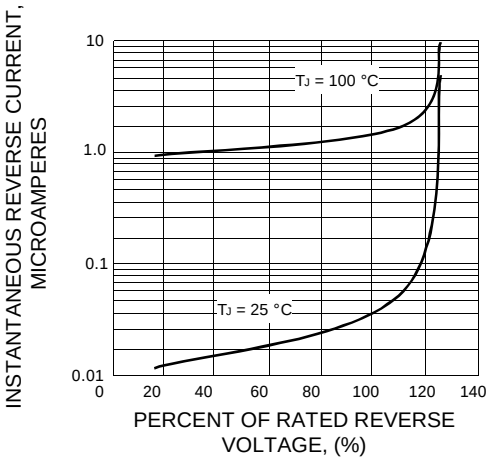


FIG.5 - TYPICAL REVERSE CHARACTERISTICS



MURS160

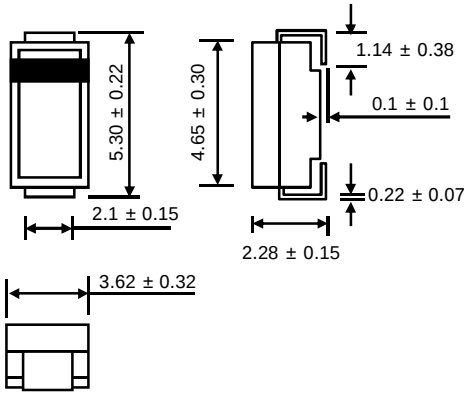
SURFACE MOUNT ULTRA FAST RECTIFIERS

PRV : 600 Volts
Io : 1.0 Ampere

FEATURES :
* High surge current capability
* High reliability
* Low reverse current
* Low forward voltage drop
* Ultra fast recovery time
* Pb / RoHS Free

MECHANICAL DATA :
* Case : SMB Molded plastic
* Epoxy : UL94V-O rate flame retardant
* Lead : Lead Formed for Surface Mount
* Polarity : Color band denotes cathode end
* Mounting position : Any
* Weight : 0.093 gram

SMB (DO-214AA)



Dimensions in millimeters

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 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%.

RATING		SYMBOL	VALUE	UNIT
Maximum Repetitive Peak Reverse Voltage		V_{RRM}	600	V
Maximum Working Peak Reverse Voltage		V_{RWM}	600	V
Maximum DC Blocking Voltage		V_{DC}	600	V
Maximum Average Forward Current T_L = 150 °C See Fig. 1 T_L = 125 °C		$I_{F(AV)}$	1.0 2.0	A
Maximum Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)		I_{FSM}	35	A
Maximum instantaneous Forward Voltage (1)	at I_F = 1.0A , T_J = 25 °C	V_F	1.50	V
	at I_F = 1.0A , T_J = 150 °C		1.25	
Maximum Instantaneous Reverse Current at Rated DC Blocking Voltage(1)	T_J = 25°C	I_R	5	µA
	T_J = 150 °C	$I_{R(H)}$	150	µA
Maximum Reverse Recovery Time (2)		Trr	50	ns
Operating Junction and Storage Temperature Range		T_J, T_{STG}	- 65 to + 175	°C

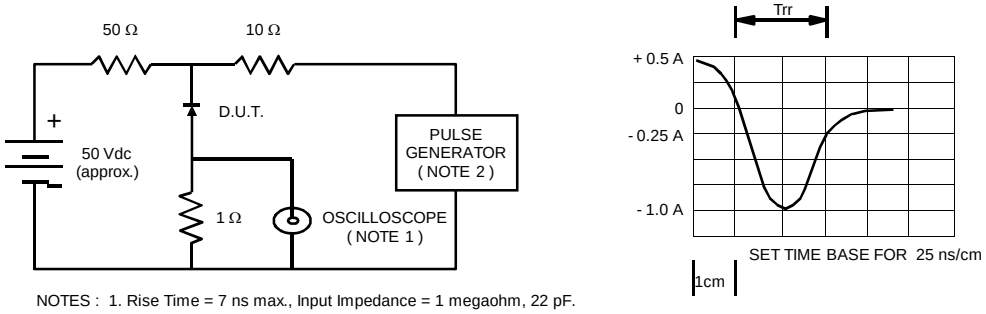
Notes :

(1) Pulse Test : Pulse Width = 300 µs, Duty Cycle ≤ 2.0%

(2) Reverse Recovery Test Conditions : I_F = 0.5A, I_R = 1A ; Irr = 0.25 A

RATING AND CHARACTERISTIC CURVES (MURS160)

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



NOTES : 1. Rise Time = 7 ns max., Input Impedance = 1 megaohm, 22 pF.
2. Rise Time = 10 ns max., Source Impedance = 50 ohms.
3. All Resistors = Non-inductive Types.

FIG.2 - DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

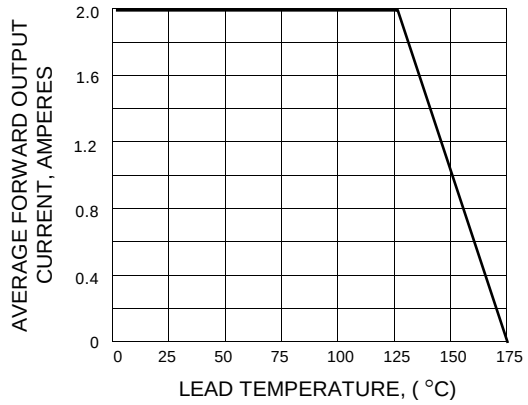


FIG.3 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

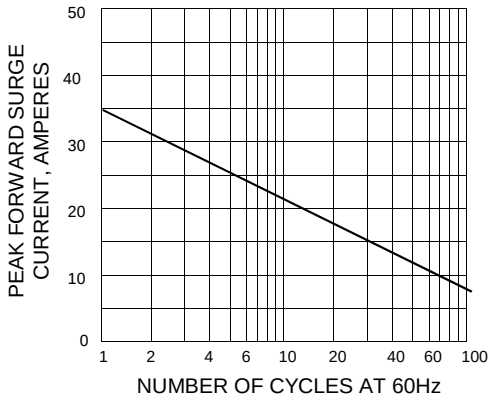


FIG.4 - TYPICAL FORWARD CHARACTERISTICS

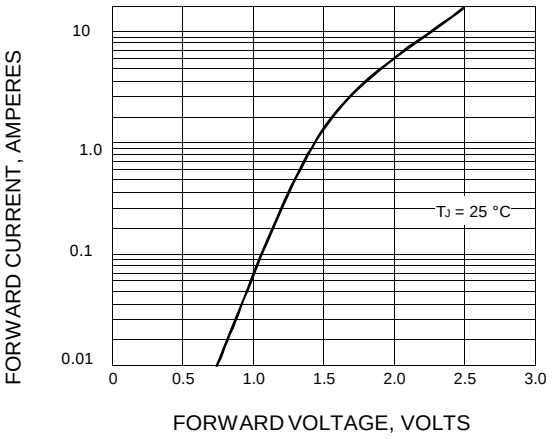


FIG.5 - TYPICAL REVERSE CHARACTERISTICS