3A, 20V - 200V Schottky Barrier Surface Mount Rectifier

FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- Guard ring for overvoltage protection
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free

APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application
- Converter

MECHANICAL DATA

- Case: DO-214AB (SMC)
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.210g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	3	A
V_{RRM}	20 - 200	V
I_{FSM}	75, 100	A
$T_{J\ MAX}$	125, 150	°C
Package	DO-214AB (SMC)	
Configuration	Single die	

Pb-Free RoHS COMPLIANT HALOGEN FREE

DO-214AB (SMC)

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

PARAMETER	SYMBOL	SS 32	SS 33	SS 34	SS 35	SS 36	SS 39	SS 310	SS 315	SS 320	UNIT
Marking code on the device		SS 32	SS 33	SS 34	SS 35	SS 36	SS 39	SS 310	SS 315	SS 320	
Repetitive peak reverse voltage	V_{RRM}	20	30	40	50	60	90	100	150	200	V
Reverse voltage, total rms value	$V_{R(RMS)}$	14	21	28	35	42	63	70	105	140	V
Forward current	I_F	3									A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	100			75						A
Critical rate of rise of off-state voltage	dV/dt	10,000									V/μs
Junction temperature	T_J	- 55 to +125			- 55 to +150						°C
Storage temperature	T_{STG}	- 55 to +150									°C

THERMAL PERFORMANCE			
PARAMETER	**SYMBOL**	**TYP**	**UNIT**
Junction-to-lead thermal resistance	$R_{\Theta JL}$	13	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	52	°C/W
Junction-to-Lead thermal resistance	$R_{\Theta JL}$	14	°C/W

Thermal Performance Note: Units mounted on PCB (16mm x 16mm Cu pad test board)

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)						
PARAMETER		**CONDITIONS**	**SYMBOL**	**TYP**	**MAX**	**UNIT**
Forward voltage(1)	SS32 SS33 SS34	I_F = 3A, T_J = 25°C	V_F	-	0.50	V
	SS35 SS36			-	0.75	V
	SS39 SS310			-	0.85	V
	SS315 SS320			-	0.95	V
	SS32 SS33 SS34	I_F = 3A, T_J = 100°C		-	0.40	V
	SS35 SS36			-	0.65	V
	SS39 SS310			-	0.70	V
	SS315 SS320			-	0.80	V

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)						
PARAMETER		**CONDITIONS**	**SYMBOL**	**TYP**	**MAX**	**UNIT**
Reverse current @ rated V_R[2]	SS32 SS33 SS34 SS35 SS36	T_J = 25°C	I_R	-	0.5	mA
	SS39 SS310 SS315 SS320			-	0.1	mA
	SS32 SS33 SS34	T_J = 100°C		-	10	mA
	SS35 SS36			-	5	mA
	SS39 SS310 SS315 SS320			-	-	mA
	SS32 SS33 SS34	T_J = 125°C		-	-	mA
	SS35 SS36			-	-	mA
	SS39 SS310 SS315 SS320			-	0.5	mA

Notes:

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

ORDERING INFORMATION		
ORDERING CODE[1]	**PACKAGE**	**PACKING**
SS3x	DO-214AB (SMC)	3,000 / Tape & Reel

Notes:

1. "x" defines voltage from 20V(SS32) to 200V(SS320)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

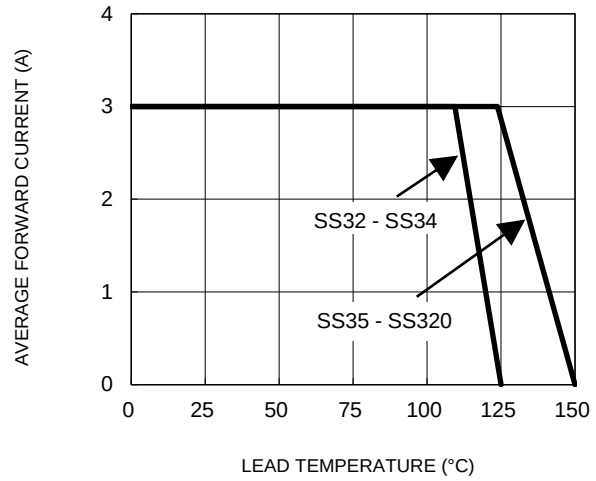


Fig.2 Typical Junction Capacitance

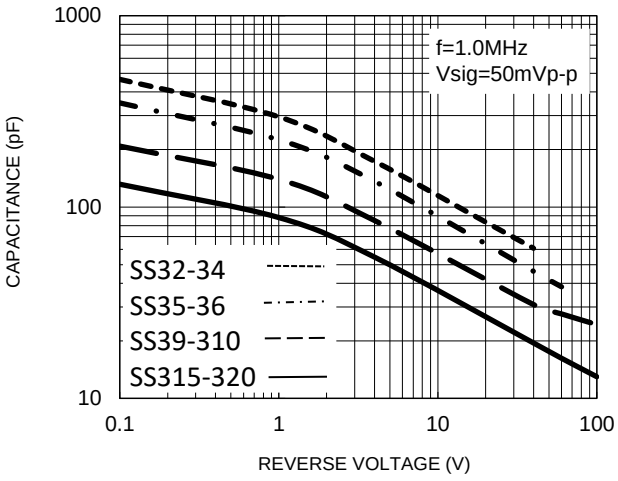


Fig.3 Typical Reverse Characteristics

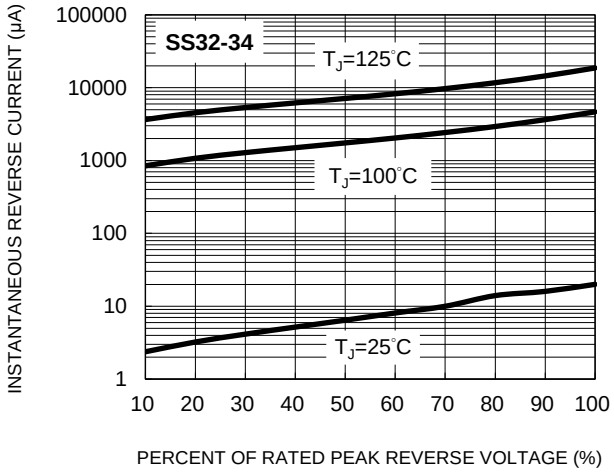


Fig.4 Typical Forward Characteristics

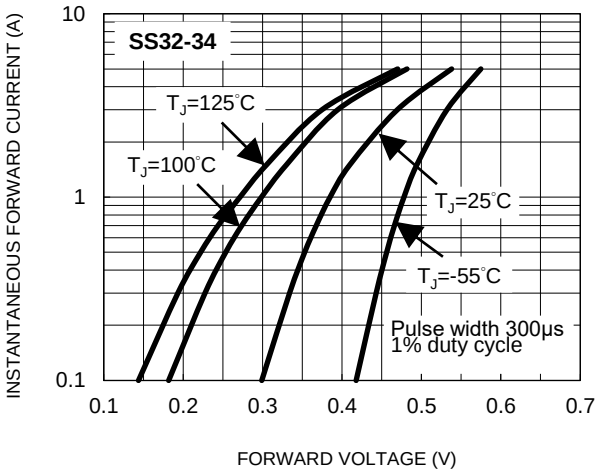


Fig.5 Typical Reverse Characteristics

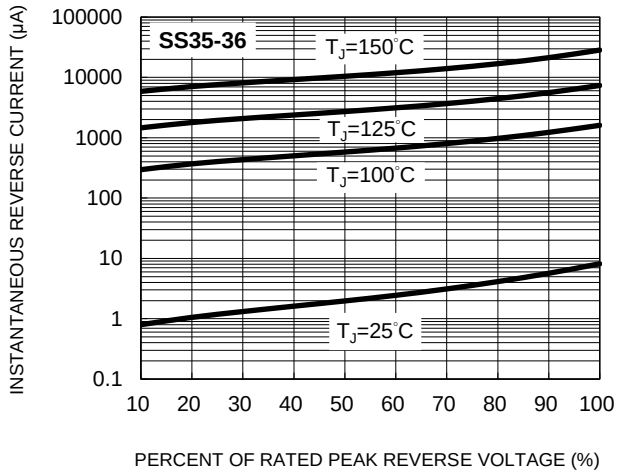
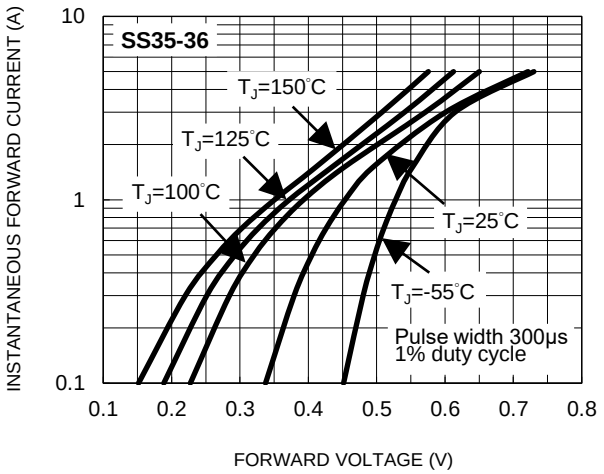


Fig.6 Typical Forward Characteristics



CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.7 Typical Reverse Characteristics

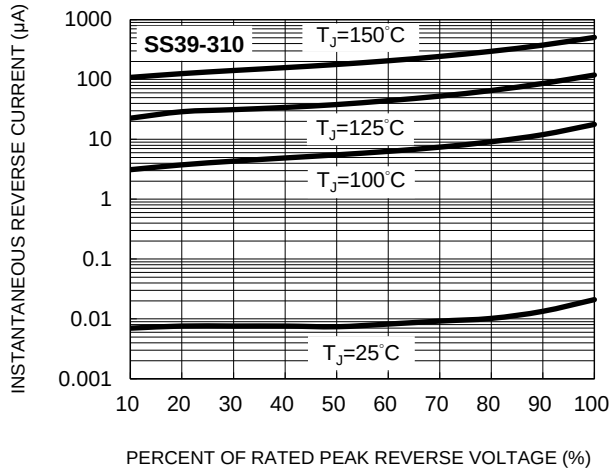


Fig.8 Typical Forward Characteristics

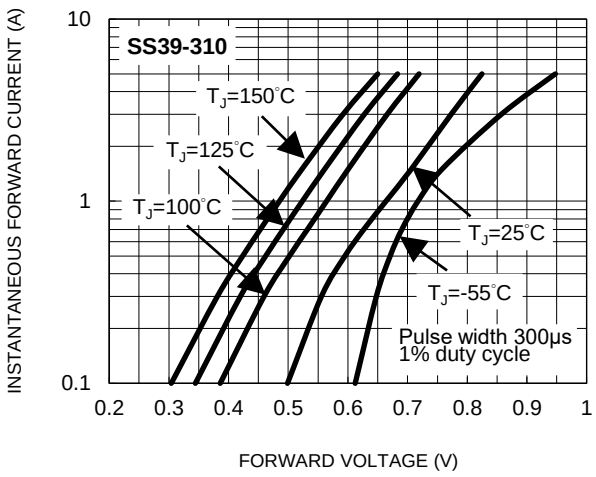


Fig.9 Typical Reverse Characteristics

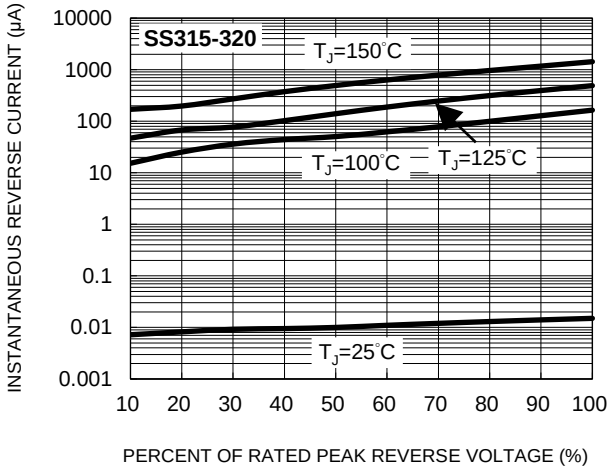


Fig.10 Typical Forward Characteristics

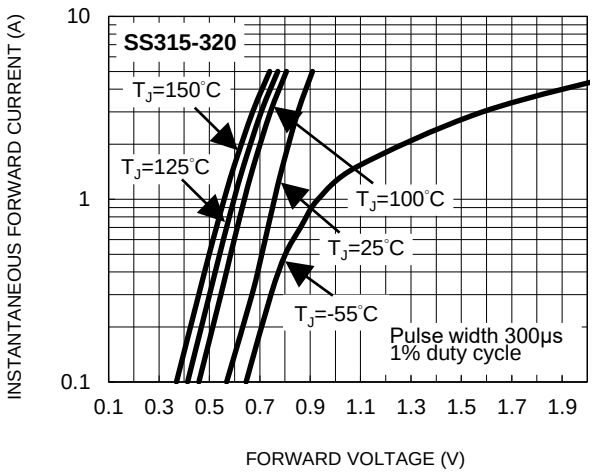


Fig.11 Typical Forward Power Dissipation vs. Forward Current

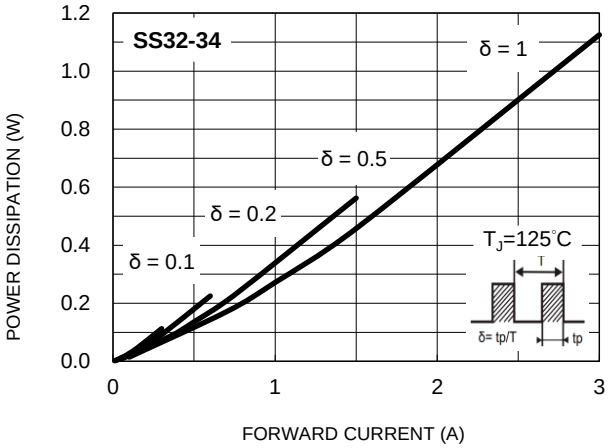
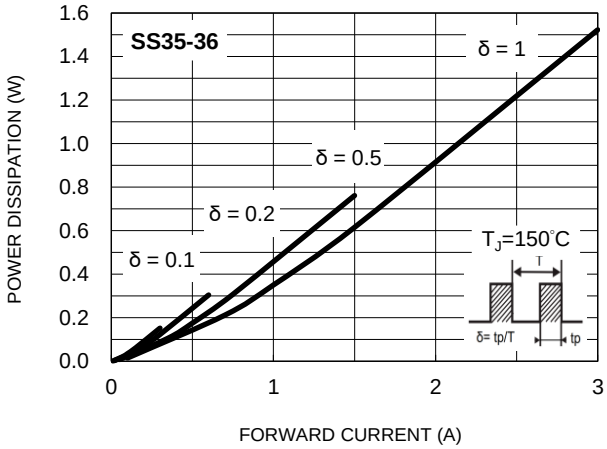


Fig.12 Typical Forward Power Dissipation vs. Forward Current



CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.13 Typical Forward Power Dissipation vs. Forward Current

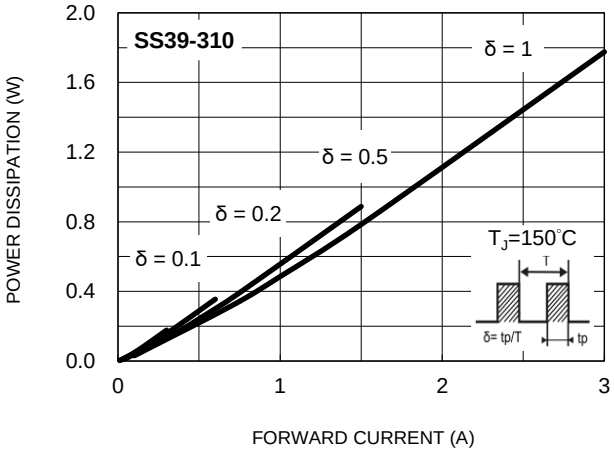


Fig.14 Typical Forward Power Dissipation vs. Forward Current

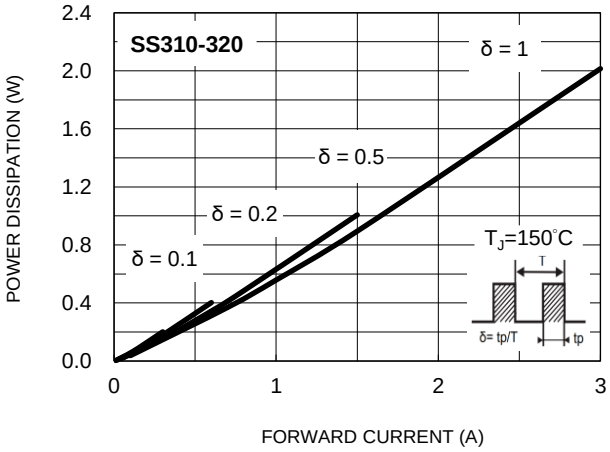


Fig.15 Maximum Non-Repetitive Forward Surge Current

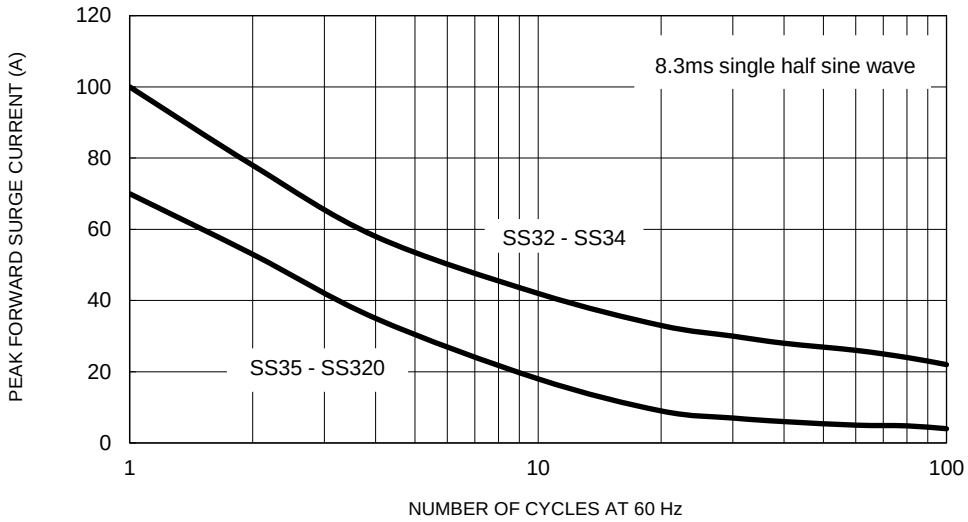
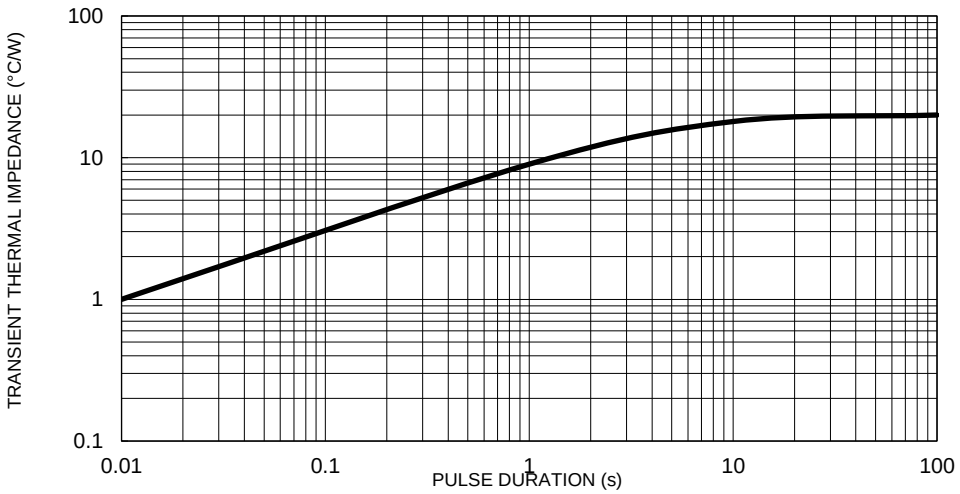
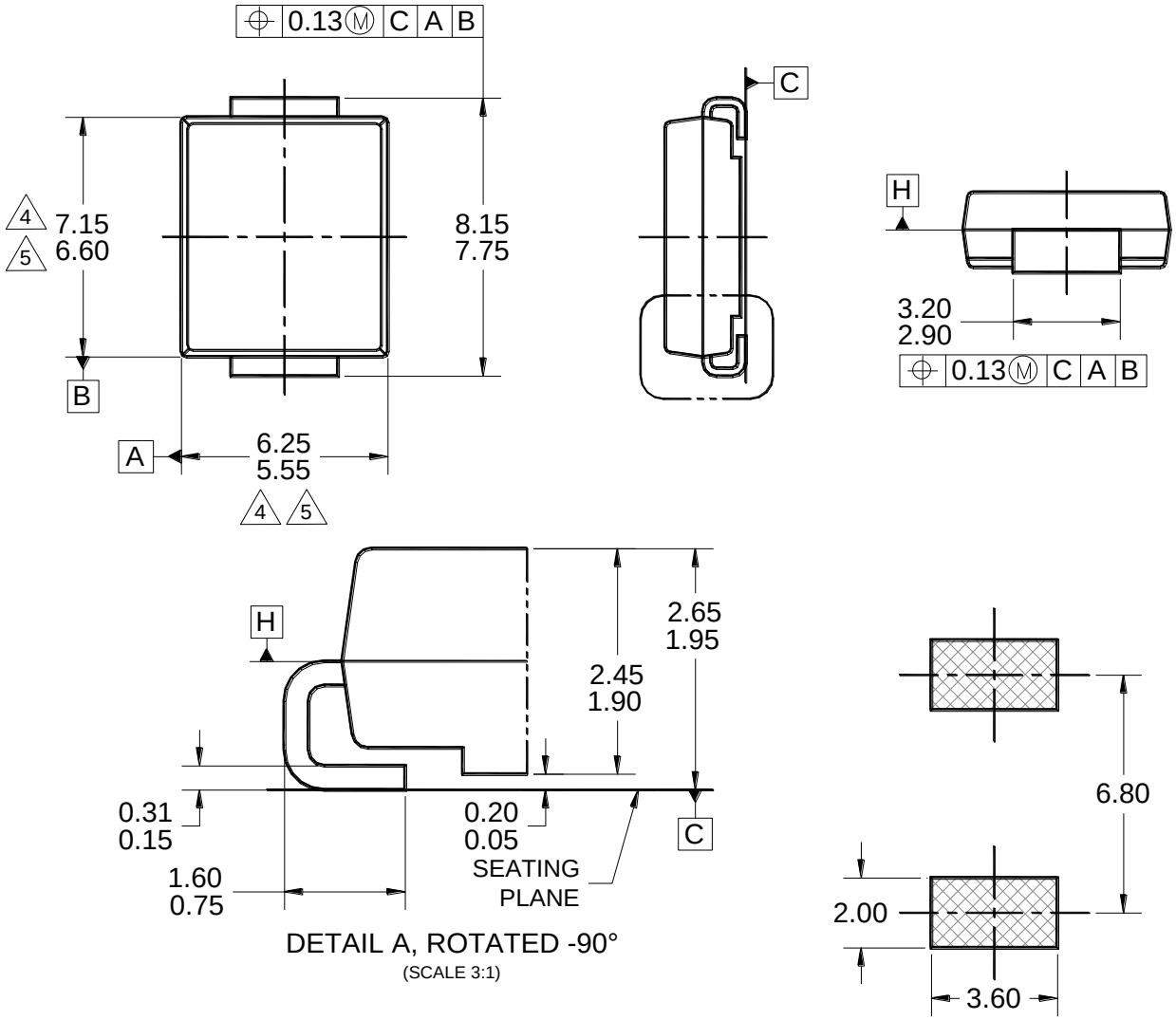


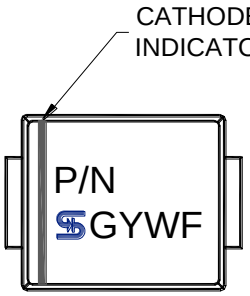
Fig.16 Typical Transient Thermal Characteristics



PACKAGE OUTLINE DIMENSIONS

DO-214AB (SMC)





MARKING DIAGRAM

P/N = MARKING CODE
G = GREEN COMPOUND
YW = DATE CODE
F = FACTORY CODE

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. PACKAGE OUTLINE REFERENCE: JEDEC DO-214, VARIATION AB, ISSUE D.
4. MOLDED PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD FLASH.
5. MOLDED PLASTIC BODY LATERAL DIMENSIONS TO BE DETERMINED AT DATUM PLANE H.
6. DWG NO. REF: HQ2SD07-DO214SMC-036 REV A.

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