

2A, 20V - 150V Schottky Barrier Surface Mount Rectifier

FEATURES

- AEC-Q101 qualified
- Low power loss, high efficiency
- Ideal for automated placement
- Guard ring for over-voltage protection
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- Low voltage, high frequency
- DC/DC converter
- Freewheeling diodes
- Reverse battery protection
- Car lighting

MECHANICAL DATA

- Case: DO-214AC (SMA)
- 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: 0.070g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	2	A
V_{RRM}	20 - 150	V
I_{FSM}	50	A
$T_{J\ MAX}$	125, 150	°C
Package	DO-214AC (SMA)	
Configuration	Single die	



DO-214AC (SMA)



ABSOLUTE MAXIMUM RATINGS (T _A = 25°C unless otherwise noted)										
PARAMETER	SYMBOL	SK 22A H	SK 23A H	SK 24A H	SK 25A H	SK 26A H	SK 29A H	SK 210A H	SK 215A H	UNIT
Marking code on the device		SK 22A	SK 23A	SK 24A	SK 25A	SK 26A	SK 29A	SK 210A	SK 215A	
Repetitive peak reverse voltage	V _{RRM}	20	30	40	50	60	90	100	150	V
Reverse voltage, total rms value	V _{R(RMS)}	14	21	28	35	42	63	70	105	V
Forward current	I _F	2								A
Surge peak forward current, 8.3ms single half sine-wave superimposed on rated load	I _{FSM}	50								A
Non-repetitive peak reverse avalanche energy, L = 40mH	E _{RSM}	20								mJ
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-ambient thermal resistance	$R_{\theta JA}$	88	°C/W

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	SK22AH SK23AH SK24AH	I _F = 2A, T _J = 25°C	V _F	-	0.50	V
	SK25AH SK26AH			-	0.70	V
	SK29AH SK210AH			-	0.85	V
	SK215AH			-	0.95	V
Reverse current @ rated V _R ⁽²⁾	SK22AH SK23AH SK24AH SK25AH SK26AH	T _J = 25°C	I _R	-	0.5	mA
	SK29AH SK210AH SK215AH			-	0.1	mA
	SK22AH SK23AH SK24AH	T _J = 100°C	I _R	-	10	mA
	SK25AH SK26AH			-	5	mA
	SK29AH SK210AH SK215AH			-	-	mA
	SK22AH SK23AH SK24AH SK25AH SK26AH	T _J = 125°C	I _R	-	-	mA
	SK29AH SK210AH SK215AH			-	2	mA

Notes:

1. Pulse test with $PW = 0.3\text{ms}$
2. Pulse test with $PW = 30\text{ms}$

ORDERING INFORMATION

ORDERING CODE ⁽¹⁾	PACKAGE	PACKING
SK2xAH	DO-214AC (SMA)	7,500 / Tape & Reel

Notes:

1. "x" defines voltage from 20V(SK22AH) to 150V(SK215AH)

CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.1 Forward Current Derating Curve

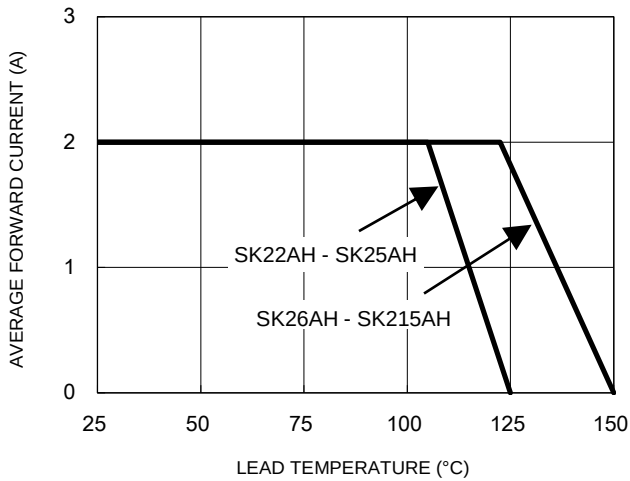


Fig.2 Typical Junction Capacitance

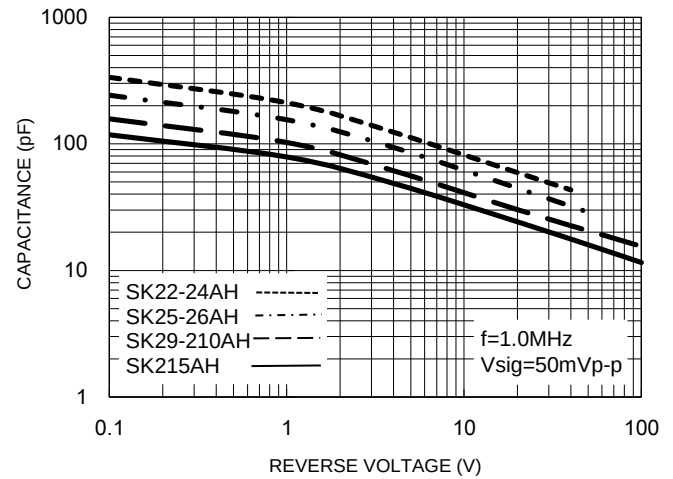


Fig.3 Typical Reverse Characteristics

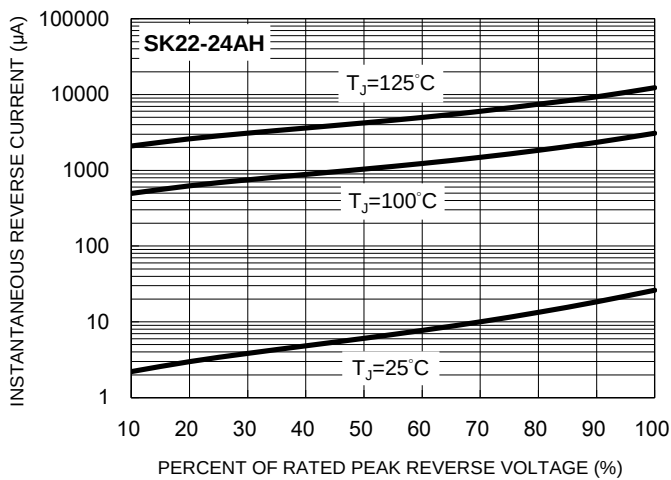


Fig.4 Typical Forward Characteristics

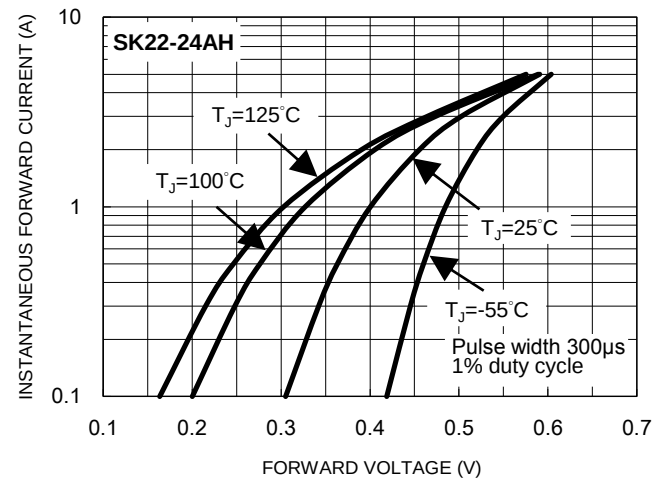


Fig.5 Typical Reverse Characteristics

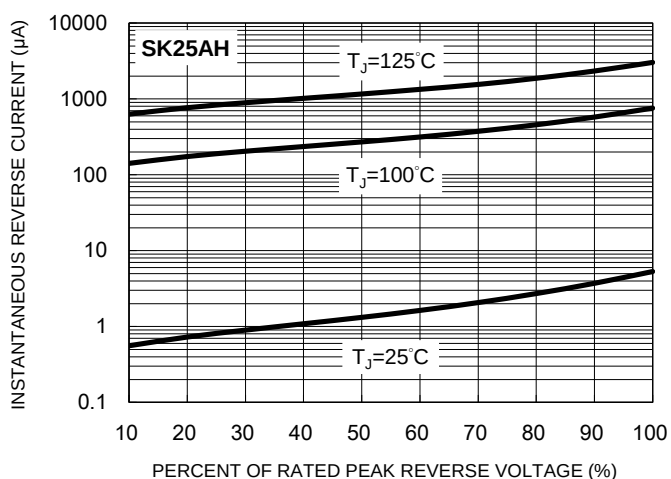
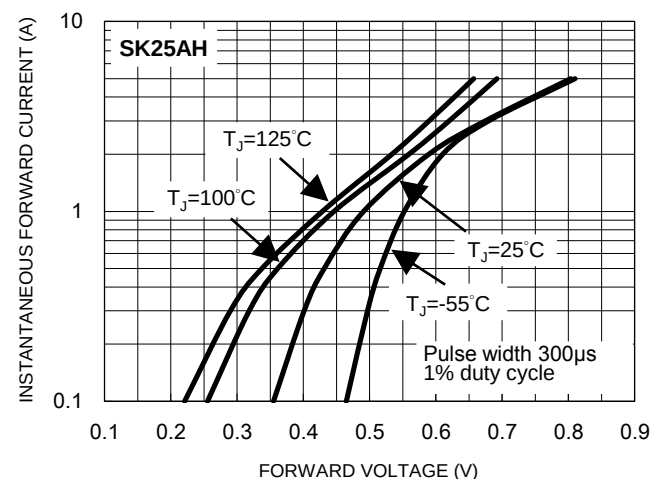


Fig.6 Typical Forward Characteristics



CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.7 Typical Reverse Characteristics

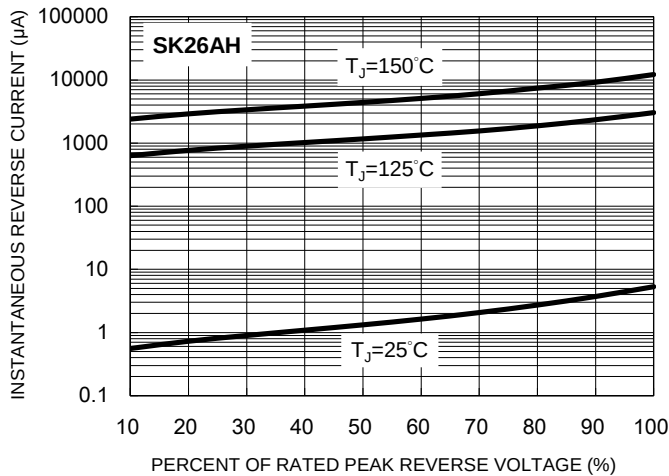


Fig.8 Typical Forward Characteristics

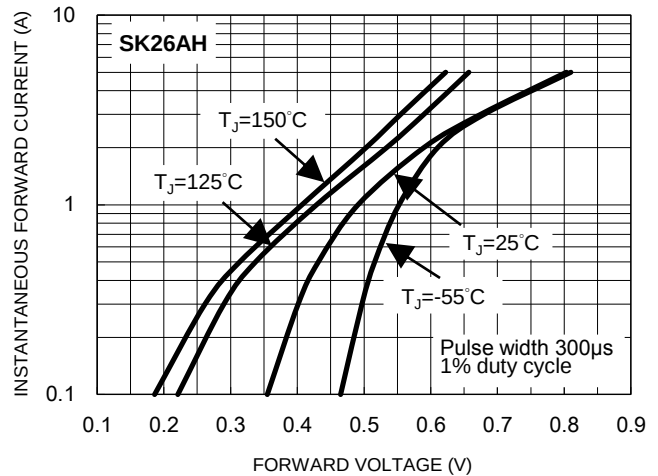


Fig.9 Typical Reverse Characteristics

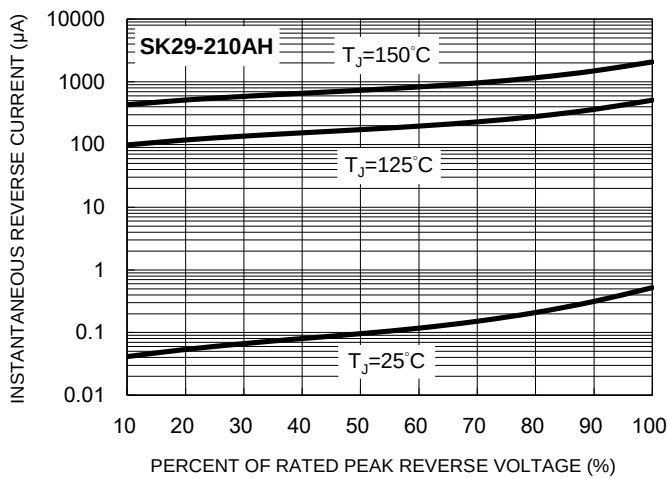


Fig.10 Typical Forward Characteristics

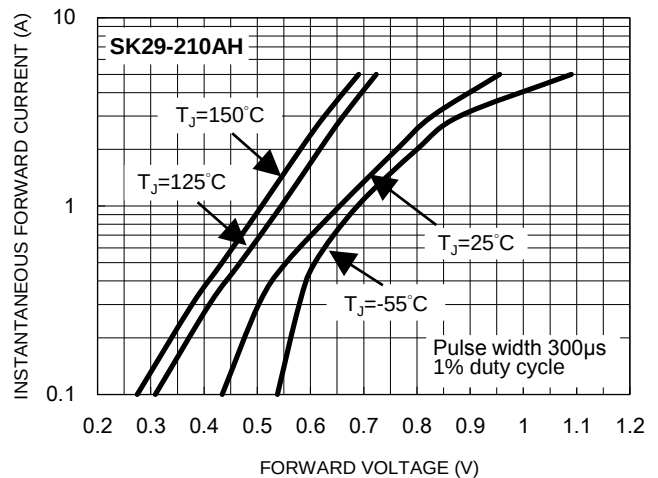


Fig.11 Typical Reverse Characteristics

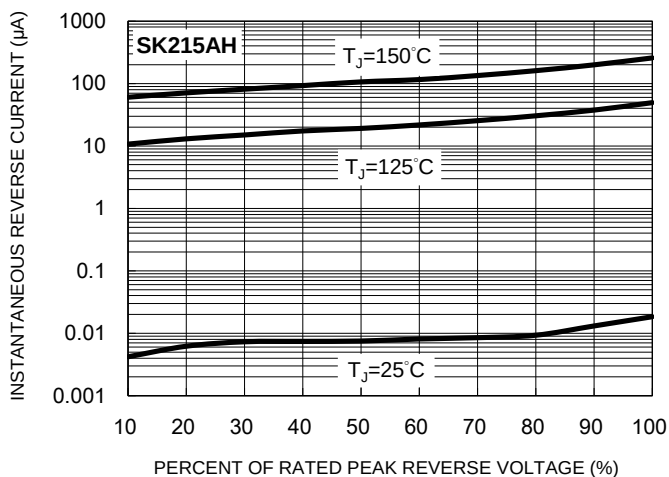
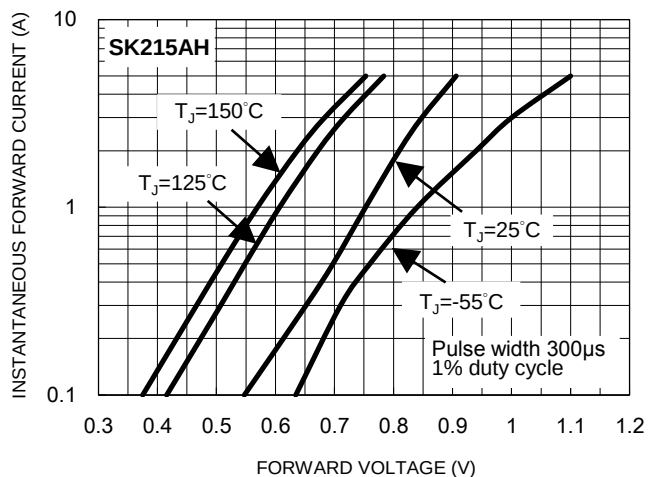


Fig.12 Typical Forward Characteristics



CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.13 Maximum Non-Repetitive Forward Surge Current

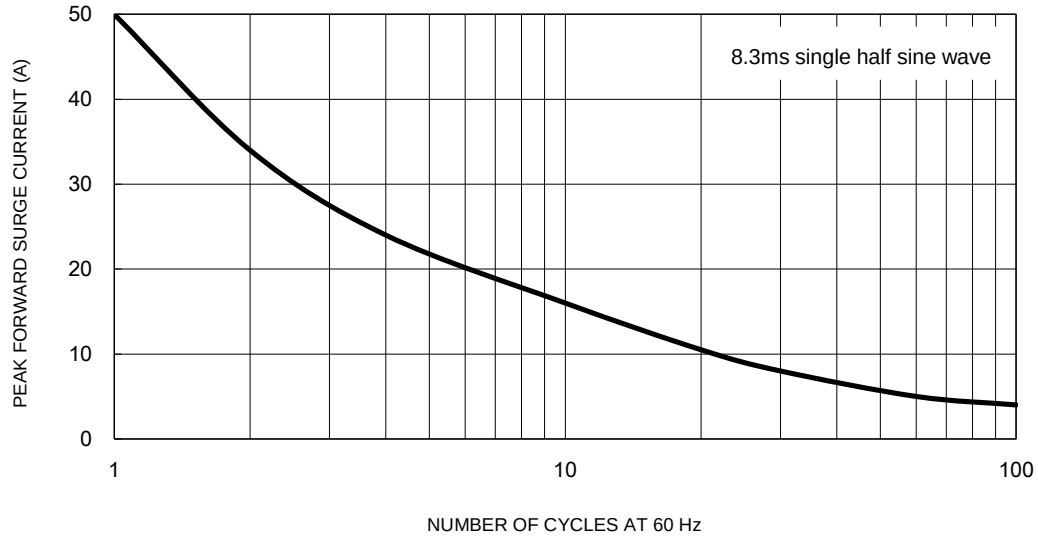
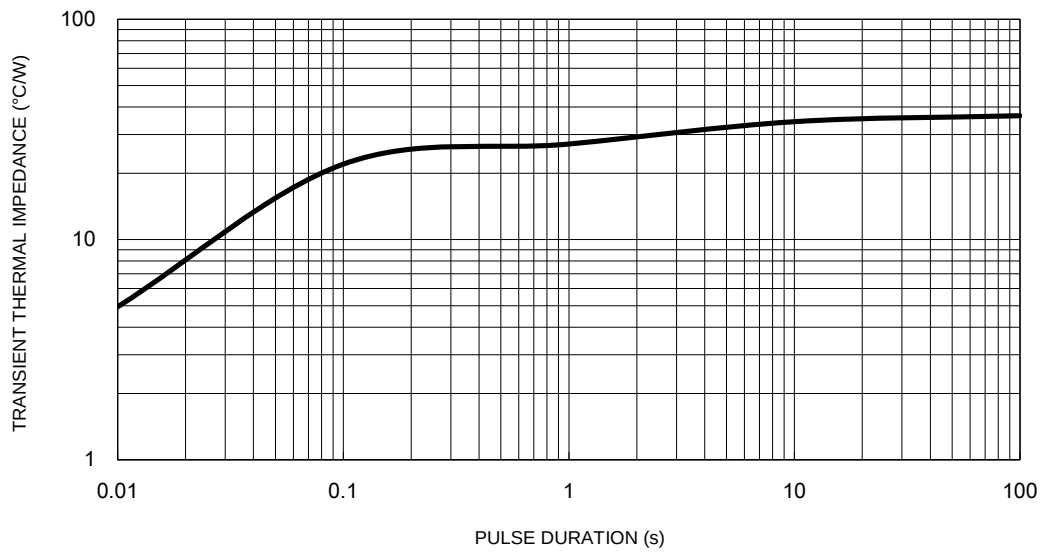
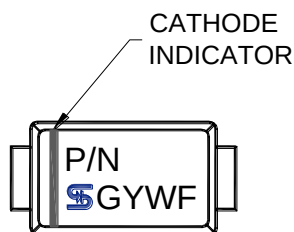
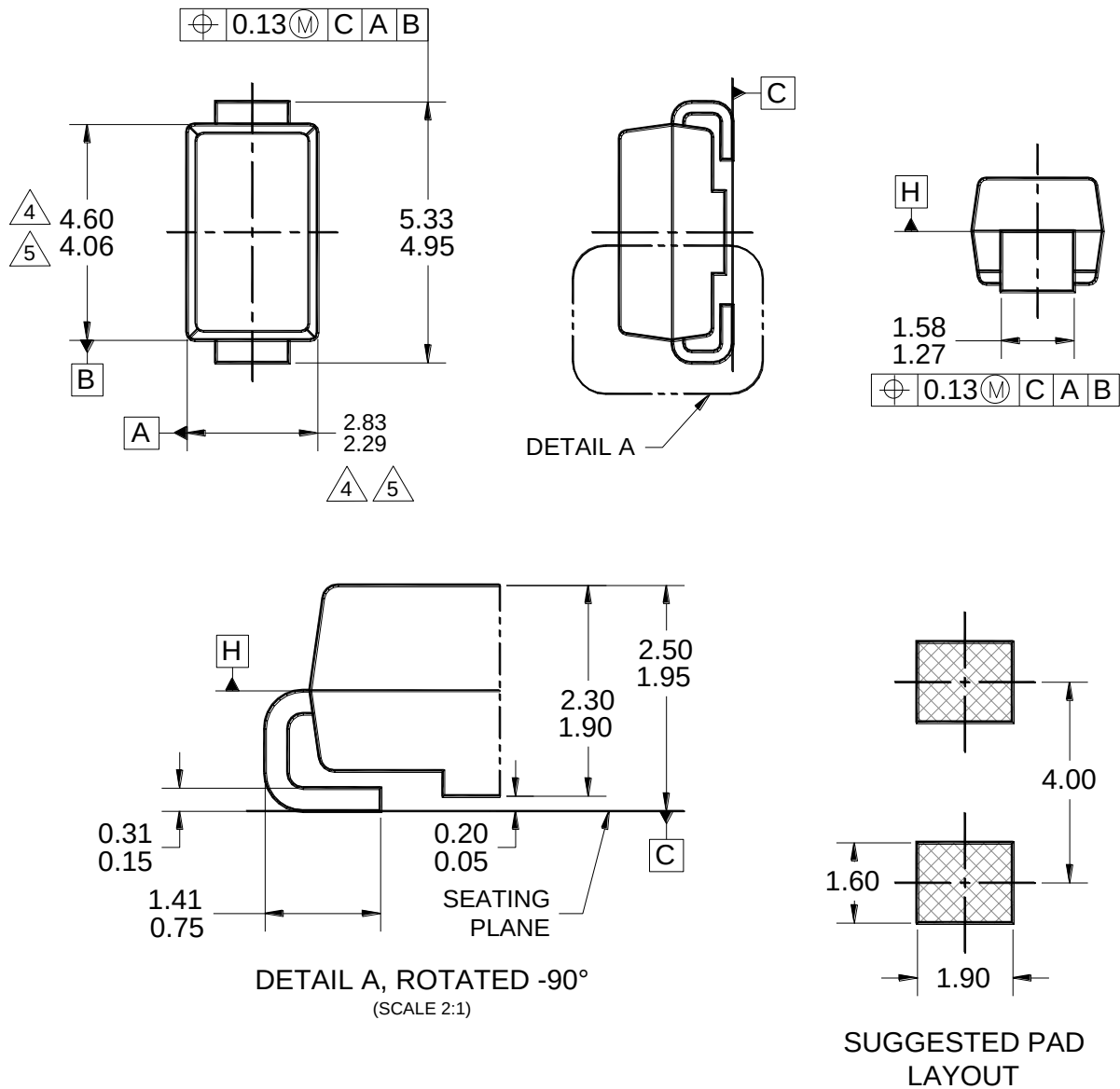


Fig.14 Typical Transient Thermal Characteristics



PACKAGE OUTLINE DIMENSIONS

DO-214AC (SMA)



MARKING DIAGRAM

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

NOTES: UNLESS OTHERWISE SPECIFIED

- ALL DIMENSIONS ARE IN MILLIMETERS.
- DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
- PACKAGE OUTLINE REFERENCE: JEDEC DO-214, VARIATION AC, ISSUE D.
- MOLDED PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD FLASH.
- MOLDED PLASTIC BODY LATERAL DIMENSIONS TO BE DETERMINED AT DATUM PLANE H.
- DWG NO. REF: HQ2SD07-DO214SMC-034 REV A.

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