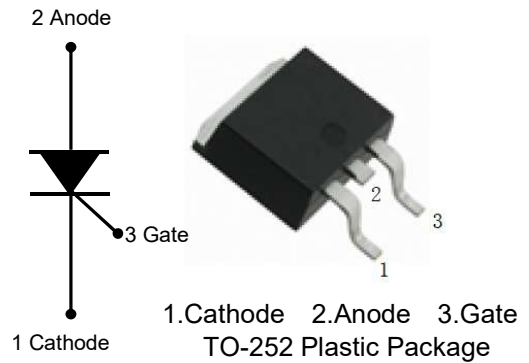


# SCR04-600R-HAF

## Silicon Unidirectional Thyristors

### Features

- Halogen and Antimony Free(HAF), RoHS compliant

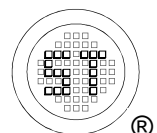


### Absolute Maximum Ratings ( $T_J = 25\text{ }^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Repetitive Peak off-State Voltage	$V_{DRM}$	600	V
Repetitive Peak Reverse Voltage	$V_{RRM}$	600	V
RMS on-State Current( $T_c = 80^\circ\text{C}$ )	$I_{T(RMS)}$	4	A
Average on-State Current( $T_c = 80^\circ\text{C}$ )	$I_{T(AV)}$	2.55	A
Non-repetitive Peak on-State Current ( 1/2 Cycle,Sine Wave, $f = 60\text{ Hz}$ , $T_J = 110^\circ\text{C}$ )	$I_{TSM}$	20	A
Circuit Fusing Considerations( $t_p = 8.3\text{ ms}$ )	$I^2t$	1.65	$\text{A}^2\text{s}$
Peak Gate Current (Pulse Width $\leq 1.0\text{ }\mu\text{S}$ , $T_c = 80^\circ\text{C}$ )	$I_{GM}$	0.2	A
Average Gate Power Dissipation (Pulse Width $\leq 1.0\text{ }\mu\text{S}$ , $T_c = 80^\circ\text{C}$ )	$P_{G(AV)}$	0.1	W
Peak gate power (Pulse Width $\leq 1.0\text{ }\mu\text{S}$ , $T_c = 80^\circ\text{C}$ )	$P_{GM}$	0.5	W
Operating Junction Temperature Range	$T_J$	- 40 to + 110	$^\circ\text{C}$
Storage Temperature Range	$T_{Stg}$	- 40 to + 150	$^\circ\text{C}$

### Thermal Characteristics

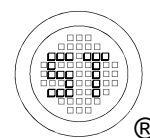
Parameter	Symbol	Value	Unit
Thermal Resistance from Junction to Case	$R_{\theta JC}$	3	$^\circ\text{C/W}$
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	75	$^\circ\text{C/W}$



# SCR04-600R-HAF

## Characteristics at $T_j = 25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Min.	Typ.	Max.	Unit
Peak Forward or Reverse Blocking Current at $V_{AK} = \text{Rated } V_{DRM} \text{ or } V_{RRM}, R_{GK} = 1\text{K}\Omega$	$I_{DRM},$ $I_{RRM}$	-	-	10 100	$\mu\text{A}$
Peak Forward on-State Voltage at $I_{TM} = 4 \text{ A}$	$V_{TM}$	-	-	2.2	V
Gate Trigger Current at $V_{AK} = 6 \text{ V}, R_L = 100 \Omega$	$I_{GT}$	-	-	200 500	$\mu\text{A}$
Gate Trigger Voltage at $V_{AK} = 6 \text{ V}, R_L = 100 \Omega$	$V_{GT}$	0.4 0.5	-	0.8 1	V
Holding Current at $V_D = 12 \text{ V}, I_{GT} = 20 \text{ mA}, \text{Gate Open}$	$I_H$	-	-	3 6 2	mA
Latching Current at $V_{AK} = 12 \text{ V}, I_{GT} = 20 \text{ mA}$	$I_L$	-	-	5 7	mA
Gate Non-Trigger Voltage at $V_{AK} = 12 \text{ V}, R_L = 100 \Omega, T_j = 110^\circ\text{C}$	$V_{GD}$	0.2	-	-	V
Gate Non-Trigger Voltage at $I_{GR} = 10 \mu\text{A}$	$V_{GRM}$	-	-	6	V
Critical Rate Of Rise Off-State Voltage at $V_{AK} = \text{Rated } V_{DRM}, \text{Exponential Waveform}, R_{GK} = 1 \text{ K}\Omega, T_j = 110^\circ\text{C}$	$dV/dt$	-	8	-	$\text{V}/\mu\text{s}$



# SCR04-600R-HAF

## Electrical Characteristics Curves

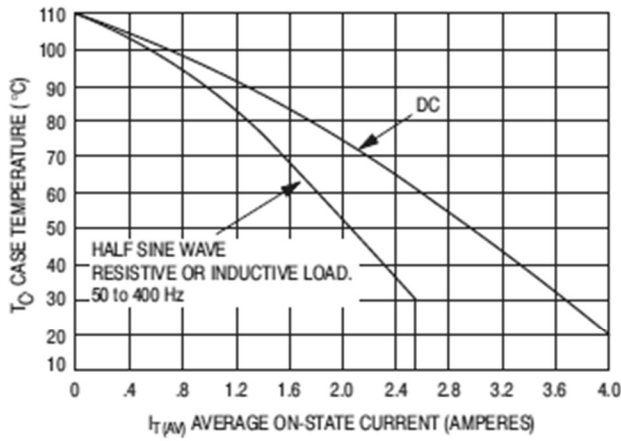


Figure 1. Average Current Derating

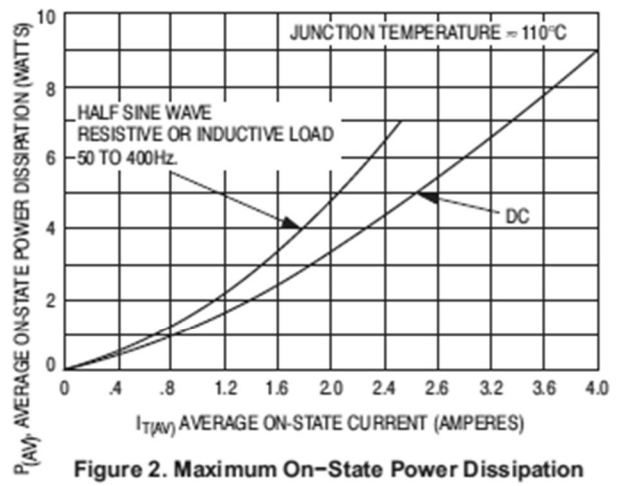


Figure 2. Maximum On-State Power Dissipation

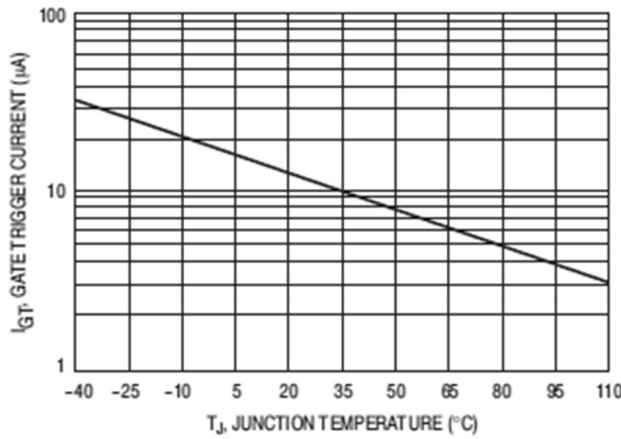


Figure 3. Typical Gate Trigger Current versus Junction Temperature

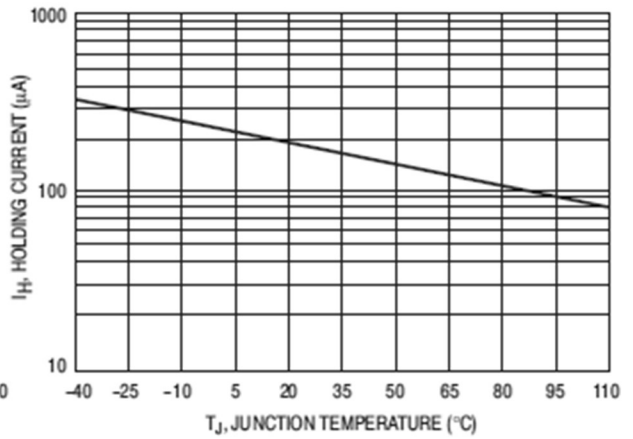


Figure 4. Typical Holding Current versus Junction Temperature

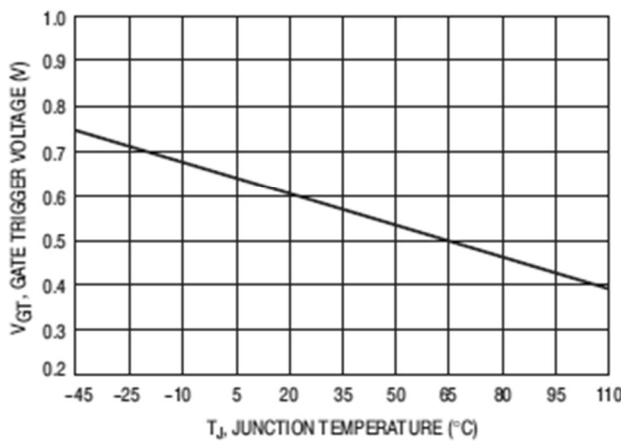


Figure 5. Typical Gate Trigger Voltage versus Junction Temperature

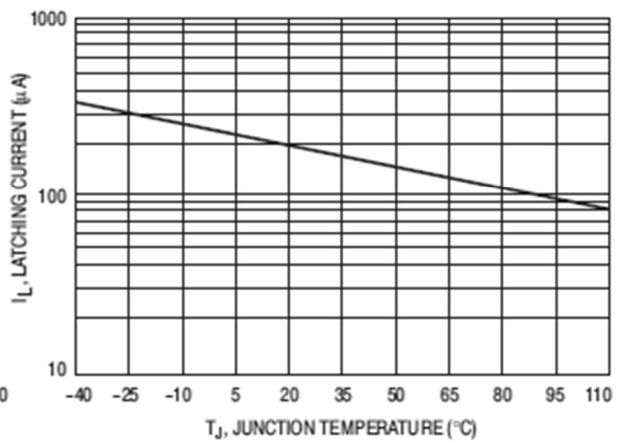
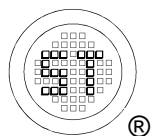


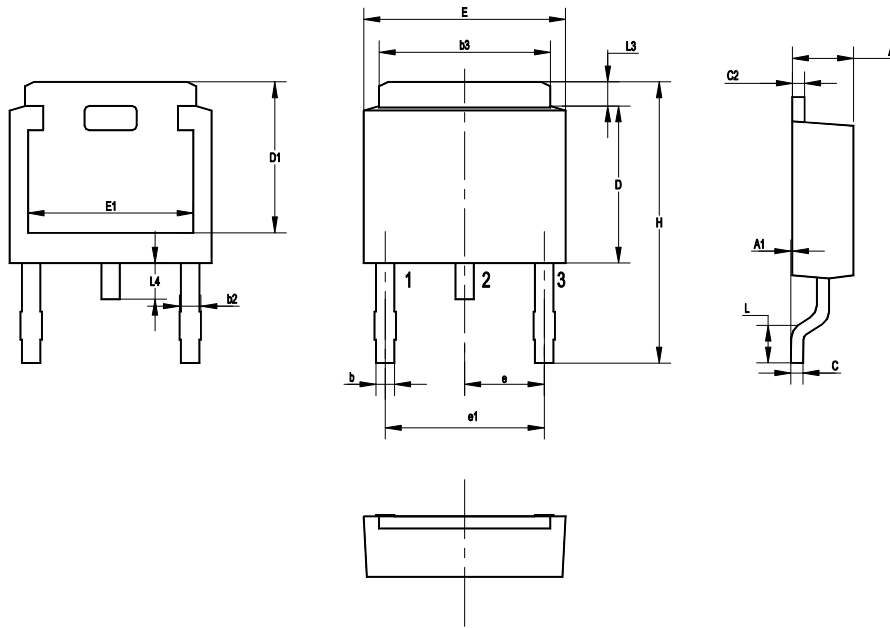
Figure 6. Typical Latching Current versus Junction Temperature



# SCR04-600R-HAF

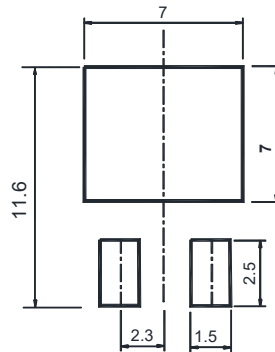
## Package Outline (Dimensions in mm)

TO-252



UNIT	A	A1	b	b2	b3	C	C2	D	D1	E	E1	e	e1	H	L	L3	L4
mm	2.5	0.15	1.0	1.15	5.5	0.65	0.65	6.2	5.4	6.7	5.0	2.30	4.60	10.7	1.78	1.20	1.10
	2.1	0	0.5	0.65	4.9	0.4	0.4	5.6	5.0	6.1	4.6	TYP.	TYP.	9	1.40	0.85	0.51

## Recommended Soldering Footprint



## Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
TO-252	16	8 ± 0.1	0.315 ± 0.004	330	13	2,500

## Marking information

" SCR04-600R " = Part No.

" \*\*\*\*\* " = Date Code Marking

Font type: Arial

