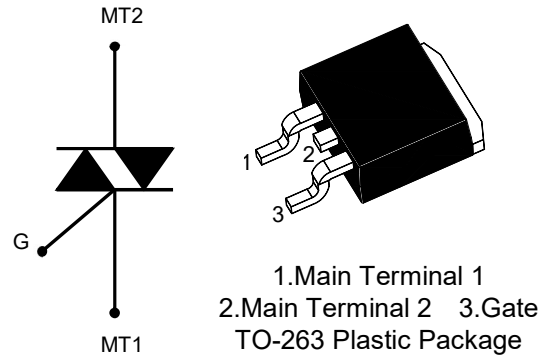


BAT16-600V-HAF

Silicon Bidirectional Thyristors

Features

- Halogen and Antimony Free(HAF), RoHS compliant



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

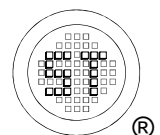
Parameter	Symbol	Value	Unit
Peak Repetitive Forward and Reverse Blocking Voltage ¹⁾ ($T_J = -40$ to $125\text{ }^\circ\text{C}$, Sine Wave, 50 to 60Hz, Gate Open)	V_{DRM} and V_{RRM}	600	V
On-State RMS Current (Full Cycle Sine Wave, 60 Hz, $T_c = 80\text{ }^\circ\text{C}$)	$I_{T(RMS)}$	16	A
Peak Non-Repetitive Surge Current (Full Cycle Sine Wave, 60 Hz, $T_c = 25\text{ }^\circ\text{C}$)	I_{TSM}	170	A
Circuit Fusing Considerations ($t = 8.3\text{ ms}$)	I^2t	120	A^2s
Peak Gate Current ($T_J = 125\text{ }^\circ\text{C}$, $t = 20\text{ ms}$)	I_{GM}	4	A
Peak Gate Power ($T_J = 125\text{ }^\circ\text{C}$, $t = 20\text{ ms}$)	P_{GM}	20	W
Forward Average Gate Power ($T_J = 125\text{ }^\circ\text{C}$)	$P_{G(AV)}$	1	W
RMS Isolation Voltage ($t = 300\text{ ms}$, R.H. $\leq 30\%$, $T_a = 25\text{ }^\circ\text{C}$)	Viso	2500	V
Operating Junction Temperature Range	T_J	- 40 to + 125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 40 to + 150	$^\circ\text{C}$

¹⁾ V_{DRM} and V_{RRM} for all types can be applied on a continuous basis. Blocking voltages shall not be tested with a constant current source such that the voltage ratings of the devices are exceeded.

Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	60	$^\circ\text{C}/\text{W}$
Thermal Resistance from Junction to Case	$R_{\theta JC}$	2.13	$^\circ\text{C}/\text{W}$

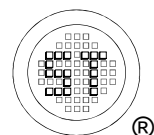
¹⁾ Device mounted on FR-4 substrate PC board, 2oz copper, with 1-inch square copper plate.



BAT16-600V-HAF

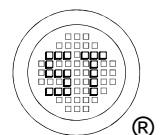
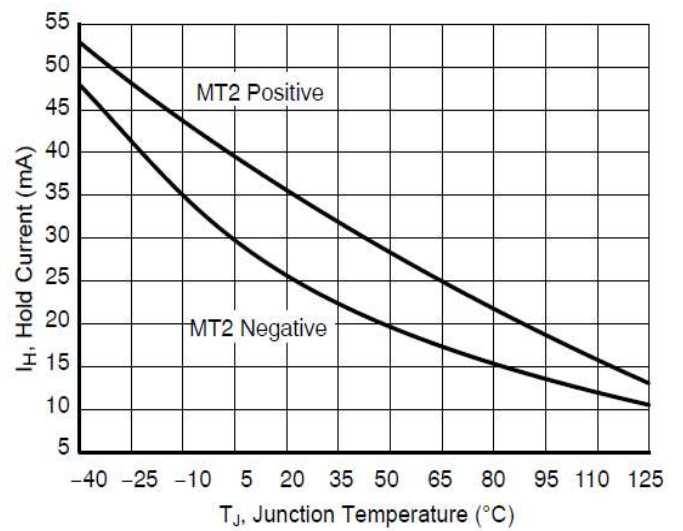
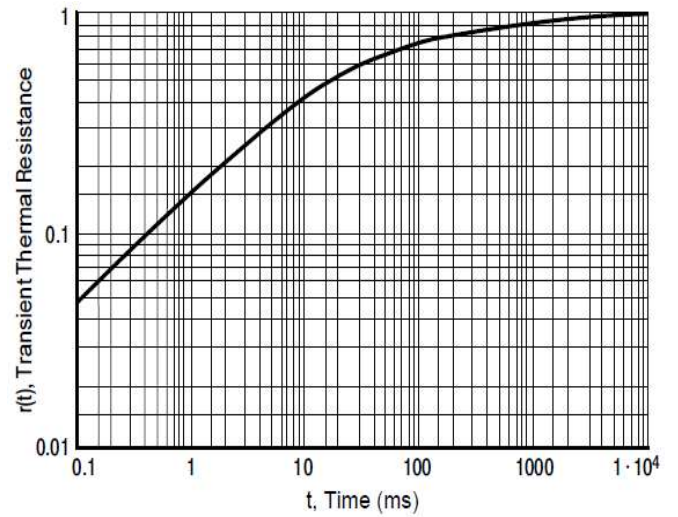
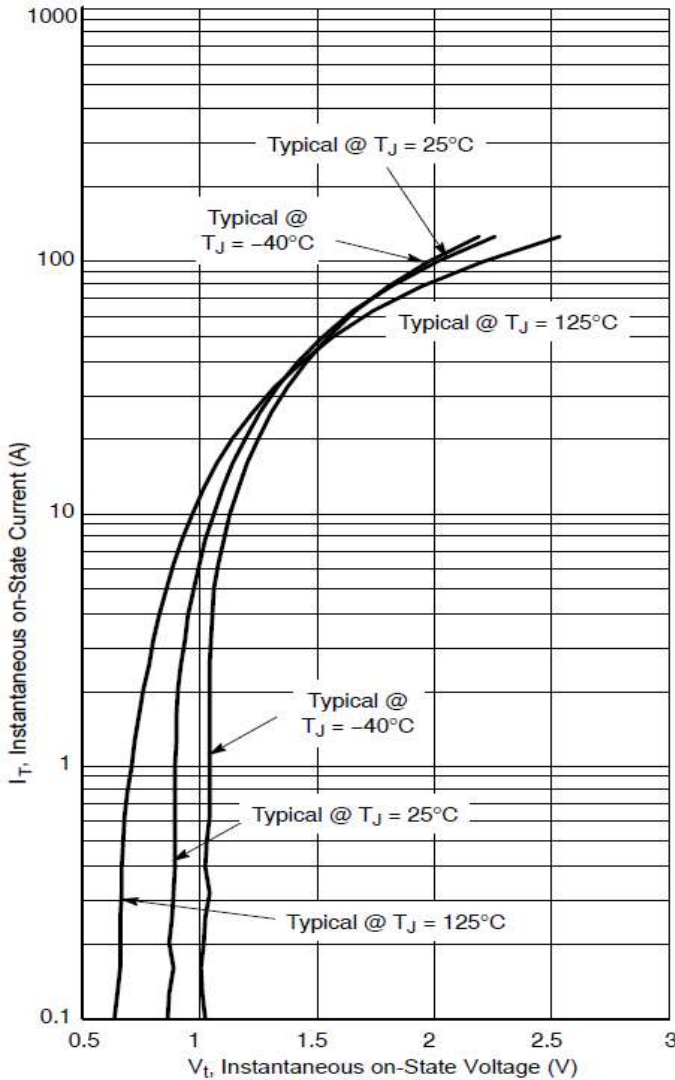
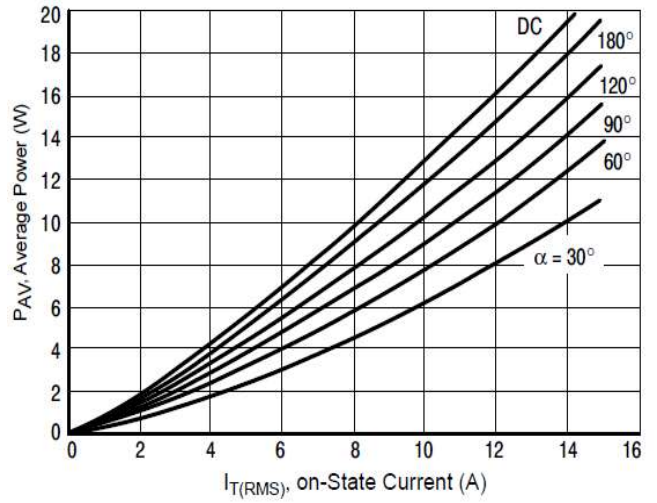
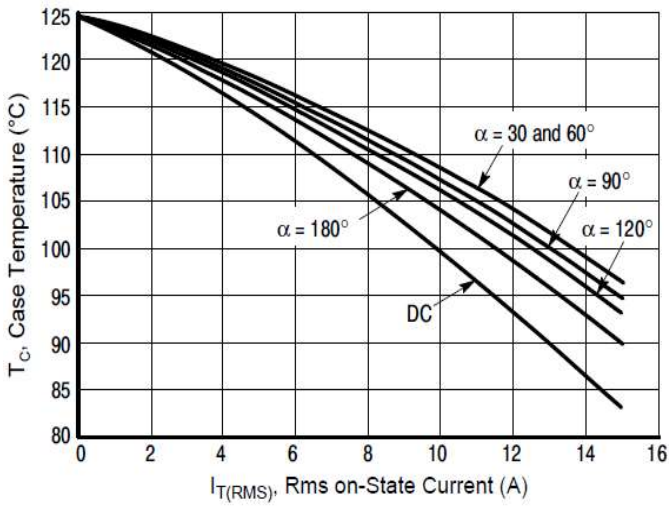
Characteristics at $T_a = 25\text{ }^\circ\text{C}$, $R_{GK} = 1\text{ K}\Omega$ unless otherwise noted.

Parameter	Symbol	Min.	Max.	Unit
Peak Forward or Reverse Blocking Current at $V_D = \text{Rated } V_{DRM} \text{ or } V_{RRM}$, Gate Open	I_{DRM}, I_{RRM}	-	5	μA
Peak Forward On-State Voltage at $I_{TM} = \pm 22.5\text{ A Peak}$	V_{TM}	-	1.55	V
Gate Trigger Current (Continuous dc), $V_D = 12\text{ V}$, $R_L = 30\ \Omega$ MT2(+), G(+) MT2(+), G(-) MT2(-), G(-)	I_{GT}	2.5 2.5 2.5	50 50 50	mA
Holding Current ($V_D = 12\text{ V}$, Gate Open, Initiating Current = $\pm 150\text{ mA}$)	I_H	-	60	mA
Latching Current ($V_D = 12\text{ V}$, $I_G = 50\text{ mA}$) MT2(+), G(+) MT2(+), G(-) MT2(-), G(-)	I_L	- - -	70 90 70	mA
Gate Trigger Voltage ($V_D = 12\text{ V}$, $R_L = 30\ \Omega$) MT2(+), G(+) MT2(+), G(-) MT2(-), G(-)	V_{GT}	0.5 0.5 0.5	1.7 1.1 1.1	V
Gate Non-Trigger Voltage ($T_J = 125\text{ }^\circ\text{C}$) MT2(+), G(+) MT2(+), G(-) MT2(-), G(-)	V_{GD}	0.2 0.2 0.2	- - -	V



BAT16-600V-HAF

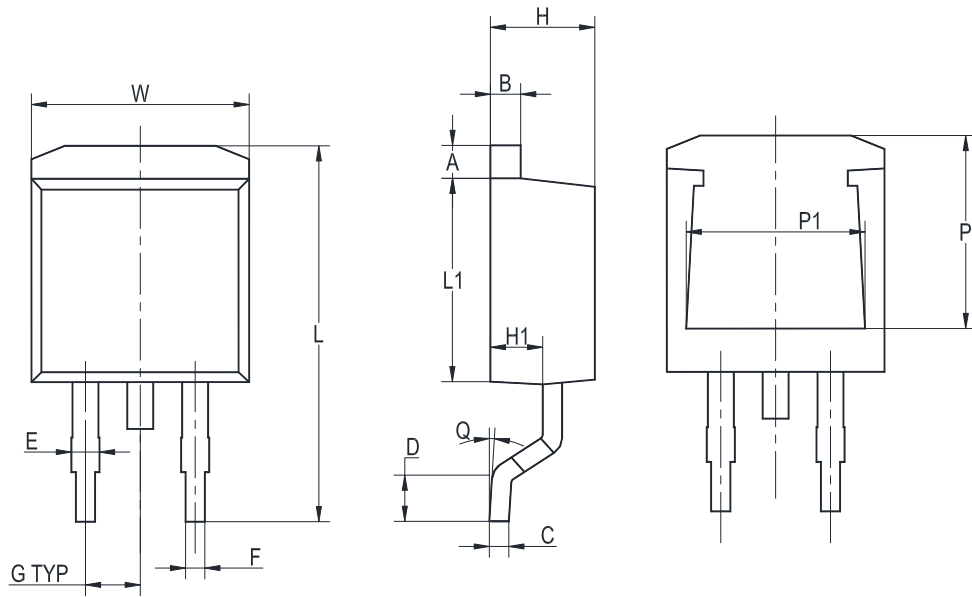
Electrical Characteristics Curves



BAT16-600V-HAF

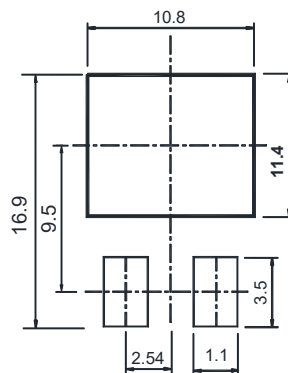
Package Outline Dimensions (Units: mm)

TO-263



UNIT	A	B	C	D	E	F	G	W	H	H1	L	L1	Q	P	P1
mm	1.5	1.5	0.5	2.60	1.6	0.94	2.54	10.5	4.8	2.9	16.5	8.7	8°	7.6	8.2
	1.1	1.1	0.3	2.15	1.1	0.68	TYP	9.6	4.4	2.5	14.5	8.2	MAX	7.1	7.4

Recommended Soldering Footprint



Packing information

Package	Reel Quantity	Box Quantity	Carton Quantity	Delivery Mode
TO-263	0.8 K / Reel	0.8 K / Box	4 K Pcs / Carton	Wheel

Marking information

" BAT16-600V " = Part No.

" ***** " = Date Code Marking

Font type: Arial

