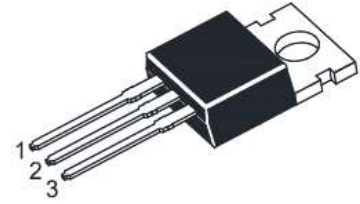


# BAT16-600-HAF

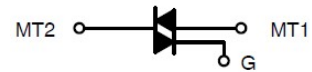
## Silicon Bidirectional Thyristors

### Features

- Halogen and Antimony Free(HAF), RoHS compliant



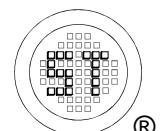
1,2: Main Terminal 1,2 3. Gate  
TO-220FB Plastic Package



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

Parameter	Symbol	Value	Unit
Peak Repetitive Forward and Reverse Blocking Voltage <sup>1)</sup> ( $T_J = -40$ to $125\text{ °C}$ , Sine Wave, 50 to 60Hz, Gate Open)	$V_{DRM}$ and $V_{RRM}$	600	V
On-State RMS Current (Full Cycle Sine Wave, 60 Hz, $T_c = 80\text{ °C}$ )	$I_{T(RMS)}$	16	A
Peak Non-Repetitive Surge Current (Full Cycle Sine Wave, 60 Hz, $T_c = 25\text{ °C}$ )	$I_{TSM}$	170	A
Circuit Fusing Considerations ( $t = 8.3\text{ ms}$ )	$I^2t$	120	$A^2s$
Peak Gate Current ( $T_J = 125\text{ °C}$ , $t = 20\text{ ms}$ )	$I_{GM}$	4	A
Peak Gate Power ( $T_J = 125\text{ °C}$ , $t = 20\text{ ms}$ )	$P_{GM}$	20	W
Forward Average Gate Power ( $T_J = 125\text{ °C}$ )	$P_{G(AV)}$	1	W
RMS Isolation Voltage ( $t = 300\text{ ms}$ , R.H. $\leq 30\%$ , $T_a = 25\text{ °C}$ )	$V_{iso}$	2500	V
Thermal Resistance from Junction to Case	$R_{\theta JC}$	2.13	$^{\circ}C/W$
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	60	$^{\circ}C/W$
Operating Junction Temperature Range	$T_J$	-40 to +125	$^{\circ}C$
Storage Temperature Range	$T_{stg}$	-40 to +150	$^{\circ}C$

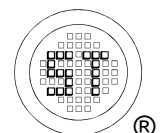
<sup>1)</sup>  $V_{DRM}$  and  $V_{RRM}$  for all types can be applied on a continuous basis. Blocking voltages shall not be tested with a constant current source such that the voltage ratings of the devices are exceeded.



# BAT16-600-HAF

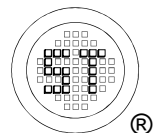
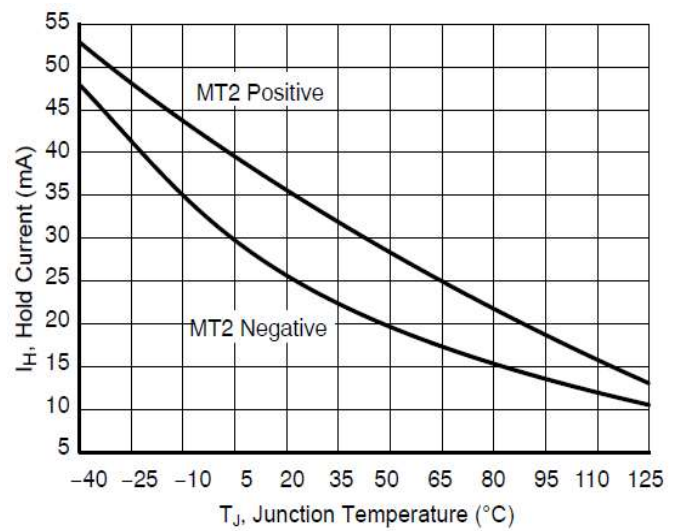
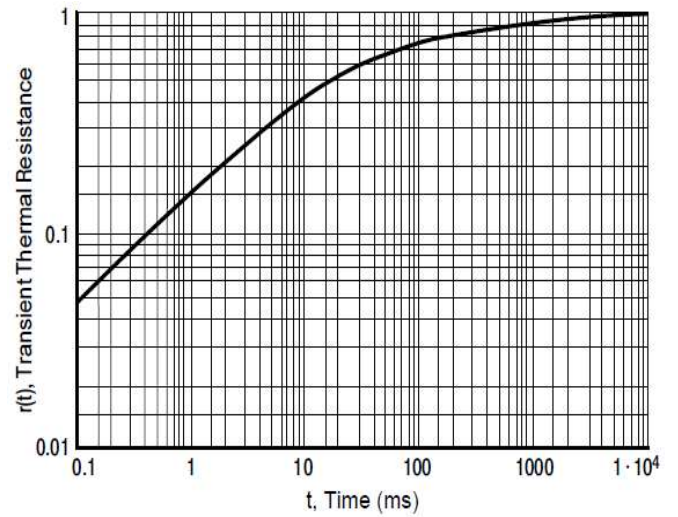
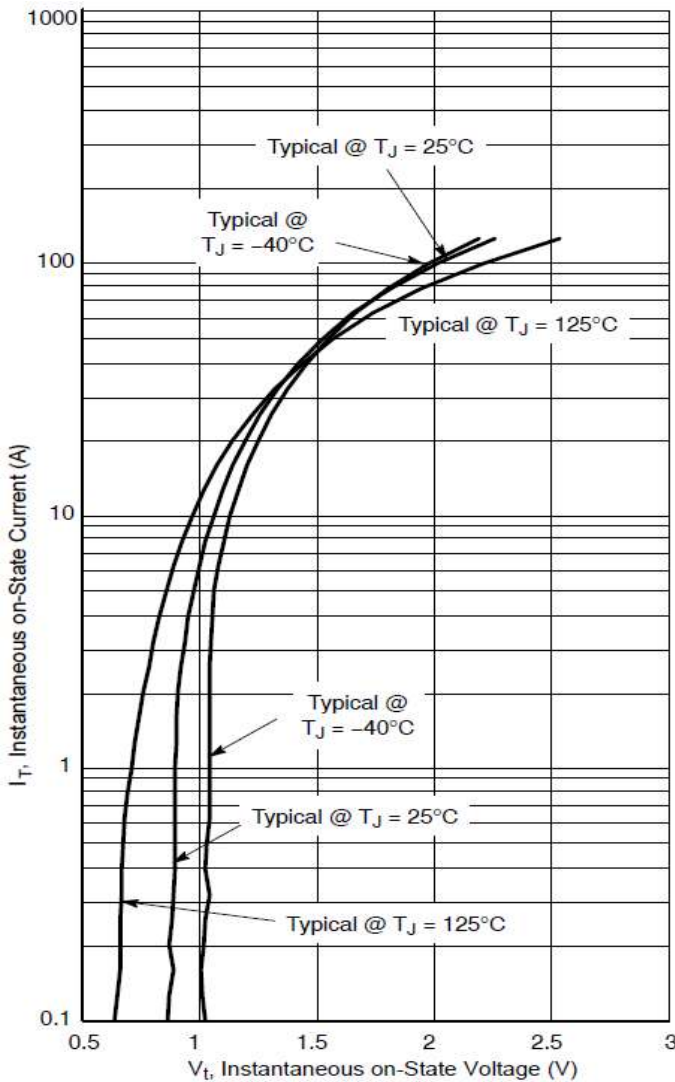
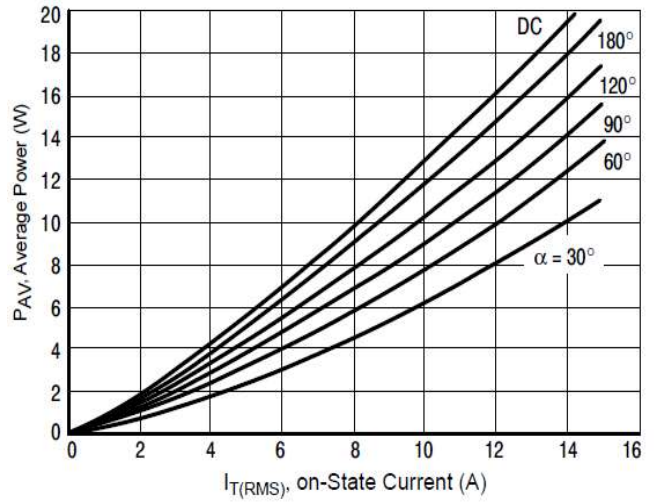
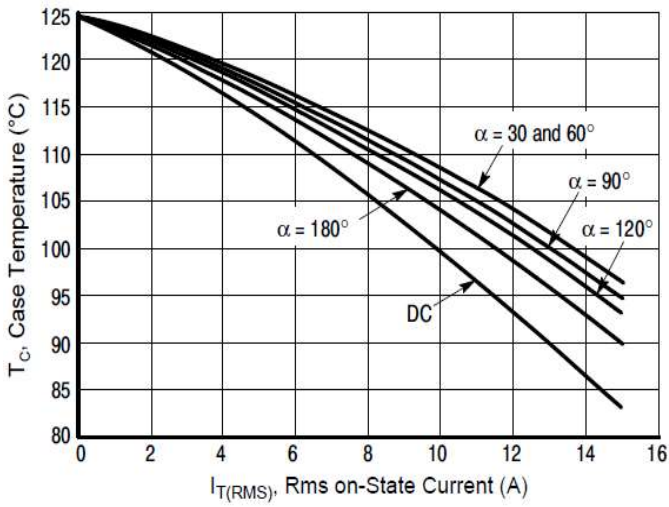
Characteristics at  $T_a = 25\text{ }^\circ\text{C}$ ,  $R_{GK} = 1\text{ K}\Omega$  unless otherwise noted.

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	$\mu\text{A}$
Peak Forward On-State Voltage at $I_{TM} = 22.5\text{ A Peak}$	$V_{TM}$	-	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



# BAT16-600-HAF

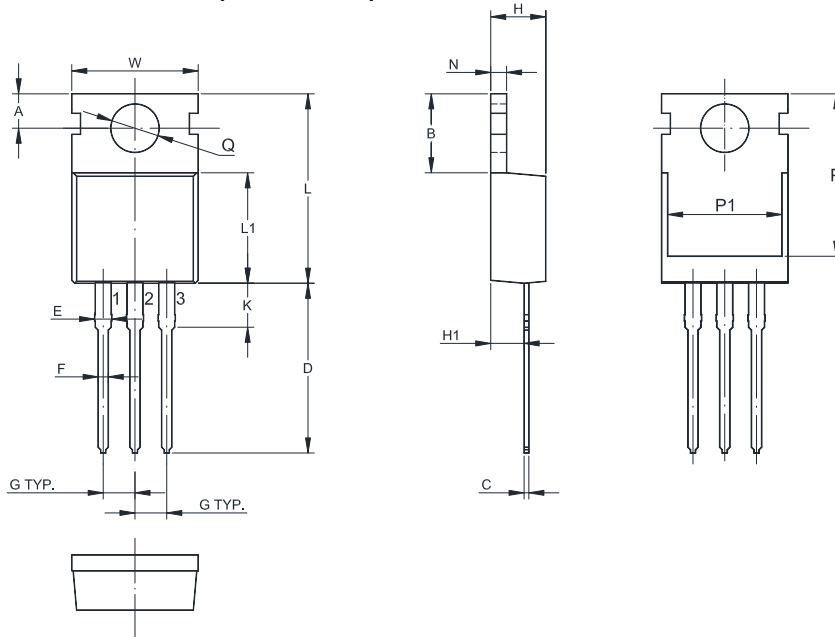
## Electrical Characteristics Curves



# BAT16-600-HAF

## Package Outline Dimensions (Units: mm)

TO-220FB



UNIT	A	B	C	D	E	F	G	W	H	H1	K	L	L1	N
mm	2.9	6.8	0.7	15	1.5	0.9	2.54	10.2	4.7	2.5	3.1	16.8	9.4	1.4
	2.7	6.4	0.3	11	1.1	0.7	TYP.	9.8	4.3	2.2	2.7	14.8	9.0	1.2

UNIT	P	P1	Q
mm	13.3	8.2	3.7
	12.7	7.6	3.5

## Marking information

" BAT16-600 " = Part No.

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

Font type: Arial

