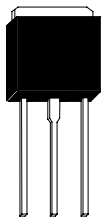
HBT134XI Series

TRIAC, LOGIC LEVEL & STANDARD



TO-251

Description

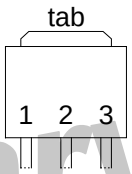
Passivated, sensitive gate triacs in a plastic envelope, intended for use in general purpose bidirectional switching and phase control applications, where high sensitivity is required in all four quadrants.

Quick Reference Data

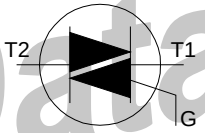
Part No.	V_{DRM}(V)	$I_{T(RMS)}$(A)	I_{TSM} (A)	Quadrant
HBT134CI	600	4	30	All
HBT134DI	600	4	30	I - II - III
HBT134GI	800	4	30	All
HBT134HI	800	4	30	I - II - III

Pin Configuration

Pin	Description
1	Main terminal 1
2	Main terminal 2
3	Gate



Symbol



Limtiing Values

Symbol	Parameter	Min.	Max.	Units
V_{DRM}	HBT134CI / DI Repetitive peak off-state voltages	-	600	V
	HBT134GI / HI Repetitive peak off-state voltages	-	800	V
$I_{T(RMS)}$	RMS on-state current	-	4	A
I_{TSM}	Non-repetitive peak on-state current	-	30	A
I^2t	I^2t for fusing	-	3.7	A^2S
dI_T/dt	Repetitive rate of rise of on-state current after triggering T2+ G+	-	50	A/us
	T2+ G-	-	50	A/us
	T2- G-	-	50	A/us
	T2- G+ (HBT134DI / HI without this quadrant)	-	10	A/us
I_{GM}	Peak gate current	-	1	A
V_{GM}	Peak gate voltage	-	7	V
P_{GM}	Peak gate power	-	1.5	W
$P_{G(AV)}$	Average gate power	-	0.1	W
Tstg	Storage Temperature Range	-	150	°C
Tj	Operating junction temperature	-40	125	°C

HBT134CI / HBT134GI
Electrical Characteristics (Ta=25°C, unless otherwise stated, 4 Quadrant)

Symbol	Parameter	Conditions	Rank		Unit
			T	U	
I_{GT}	Gate Trigger Current	V_D=6V, R_L=10Ω, T2+ G+	5	10	mA
		V_D=6V, R_L=10Ω, T2+ G-	5	10	mA
		V_D=6V, R_L=10Ω, T2- G-	5	10	mA
		V_D=6V, R_L=10Ω, T2- G+	10	25	mA
I_L	Latching Current	V_D=6V, R_L=10Ω, T2+ G+	15	15	mA
		V_D=6V, R_L=10Ω, T2+ G-	20	20	mA
		V_D=6V, R_L=10Ω, T2- G-	15	15	mA
		V_D=6V, R_L=10Ω, T2- G+	20	20	mA
I_H	Holding Current	V_D=12V, I_{GT}=0.1A	15	15	mA
V_T	On-state Voltage	I_T=4.5A	1.5	1.5	V
V_{GT}	Gate Trigger Voltage	V_D=6V, R_L=10Ω, T2+ G+	1.5	1.5	V
		V_D=6V, R_L=10Ω, T2+ G-	1.5	1.5	V
		V_D=6V, R_L=10Ω, T2- G-	1.5	1.5	V
		V_D=6V, R_L=10Ω, T2- G+	1.8	1.8	V
I_D	Off-state Leakage Current	V_D=V_{DRM}	200	200	uA

HBT134DI / HBT134HI
Electrical Characteristics (Ta=25°C, unless otherwise stated, 3 Quadrant)

Symbol	Parameter	Conditions	Rank		Unit
			T	U	
I_{GT}	Gate Trigger Current	V_D=6V, R_L=10Ω, T2+ G+	5	10	mA
		V_D=6V, R_L=10Ω, T2+ G-	5	10	mA
		V_D=6V, R_L=10Ω, T2- G-	5	10	mA
		V_D=6V, R_L=10Ω, T2- G+	-	-	mA
I_L	Latching Current	V_D=6V, R_L=10Ω, T2+ G+	15	15	mA
		V_D=6V, R_L=10Ω, T2+ G-	20	20	mA
		V_D=6V, R_L=10Ω, T2- G-	15	15	mA
		V_D=6V, R_L=10Ω, T2- G+	-	-	mA
I_H	Holding Current	V_D=12V, I_{GT}=0.1A	15	15	mA
V_T	On-state Voltage	I_T=4.5A	1.5	1.5	V
V_{GT}	Gate Trigger Voltage	V_D=6V, R_L=10Ω, T2+ G+	1.5	1.5	V
		V_D=6V, R_L=10Ω, T2+ G-	1.5	1.5	V
		V_D=6V, R_L=10Ω, T2- G-	1.5	1.5	V
		V_D=6V, R_L=10Ω, T2- G+	-	-	V
I_D	Off-state Leakage Current	V_D=V_{DRM}	200	200	uA

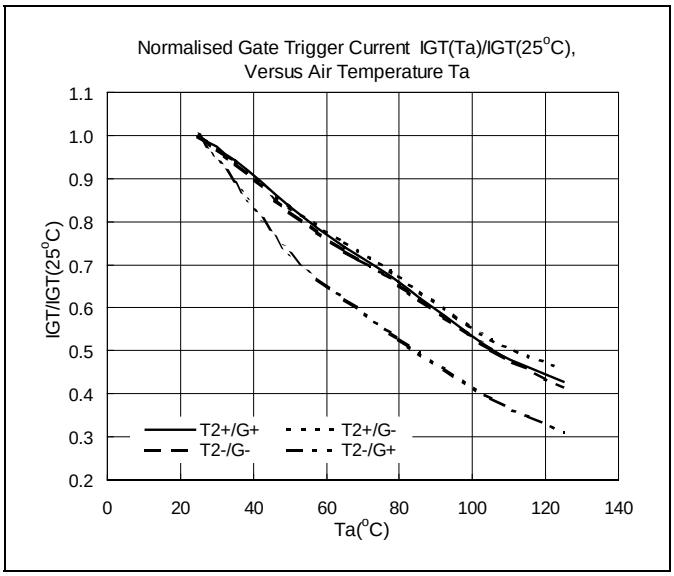
Static Characteristics

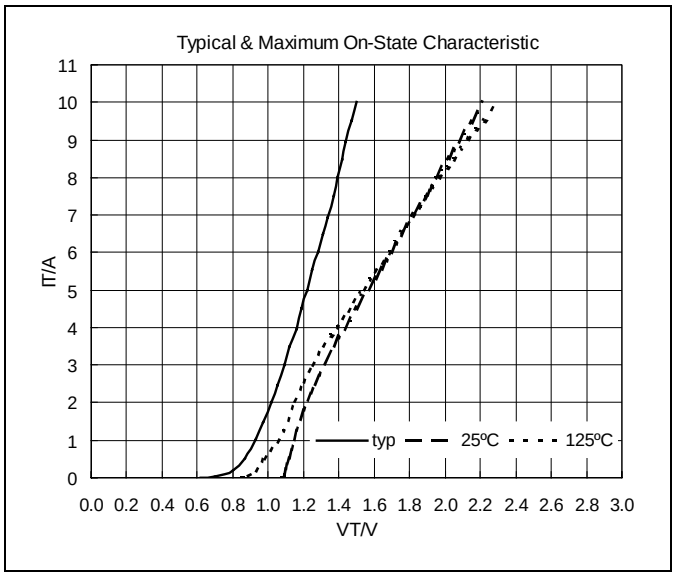
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
dV_D/dt	Critical rate of rise of off-state voltage	V_{DM}=67% $V_{DRM(max)}$; Tj= 125°C; exponential waveform; gate open circuit	-	50	-	V/us
tgt	Gate controlled turn-on time	I_{TM}=6A; V_D=$V_{DRM(max)}$; I_G=0.1A; dI_G/dt=5A/us	-	2	-	us

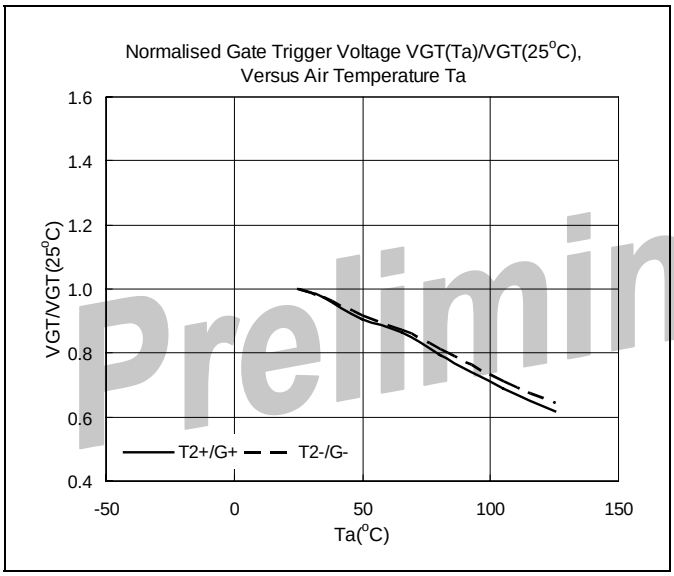
Thermal Resistances

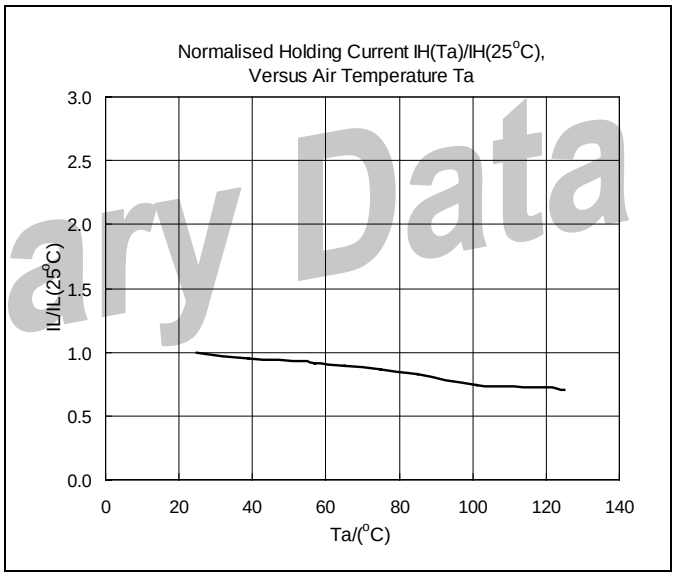
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
Rth j-mb	Thermal resistance junction to mounting base	Full cycle	-	-	3.0	K/W
		Half cycle	-	-	3.7	K/W
Rth j-a	Thermal resistance junction to ambient	In free air	-	60	-	K/W

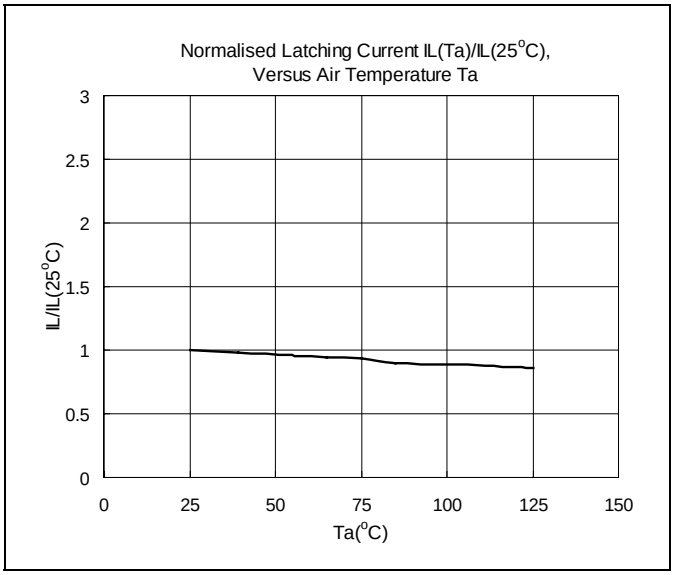
Characteristics Curve

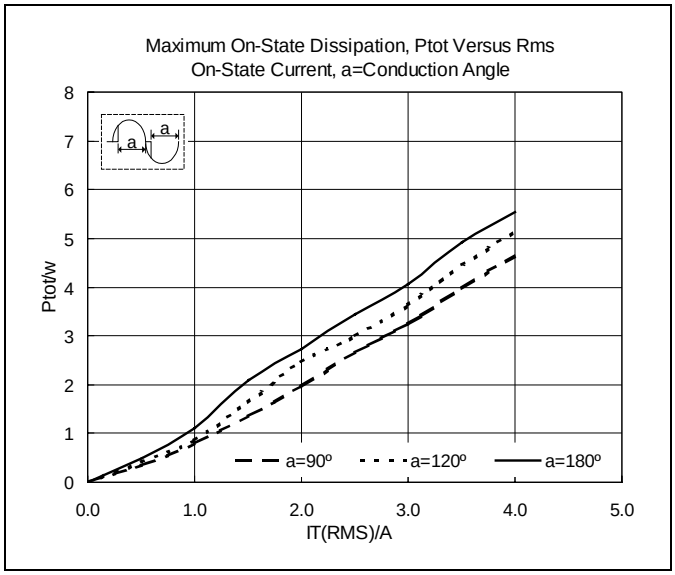




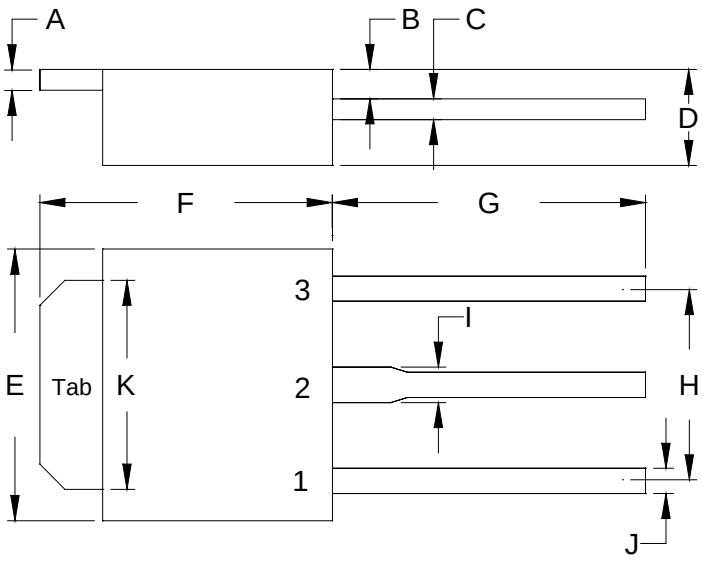




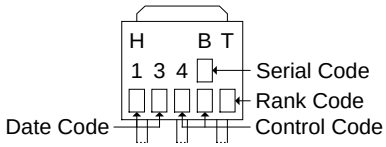




TO-251 Dimension



Marking:



Style: Pin 1. Main terminal 1
2. Main terminal 2
3. Gate
Tab connected to main terminal 2

3-Lead TO-251 Plastic Package
HSMC Package Code: I

*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.0177	0.0217	0.45	0.55	G	0.2559	-	6.50	-
B	0.0354	0.0591	0.90	1.50	H	-	*0.1811	-	*4.60
C	0.0177	0.0236	0.45	0.60	I	-	0.0354	-	0.90
D	0.0866	0.0945	2.20	2.40	J	-	0.0315	-	0.80
E	0.2520	0.2677	6.40	6.80	K	0.2047	0.2165	5.20	5.50
F	0.2677	0.2835	6.80	7.20					

Notes: 1.Dimension and tolerance based on our Spec. dated May. 24,1995.
2.Controlling dimension: millimeters.
3.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
4.If there is any question with packing specification or packing method, please contact your local HSMC sales office.

Material:

- Lead: 42 Alloy ; solder plating
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

Head Office And Factory :

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