

TRIACS
SILLICON BIDIRECTIONAL THYRISTORS

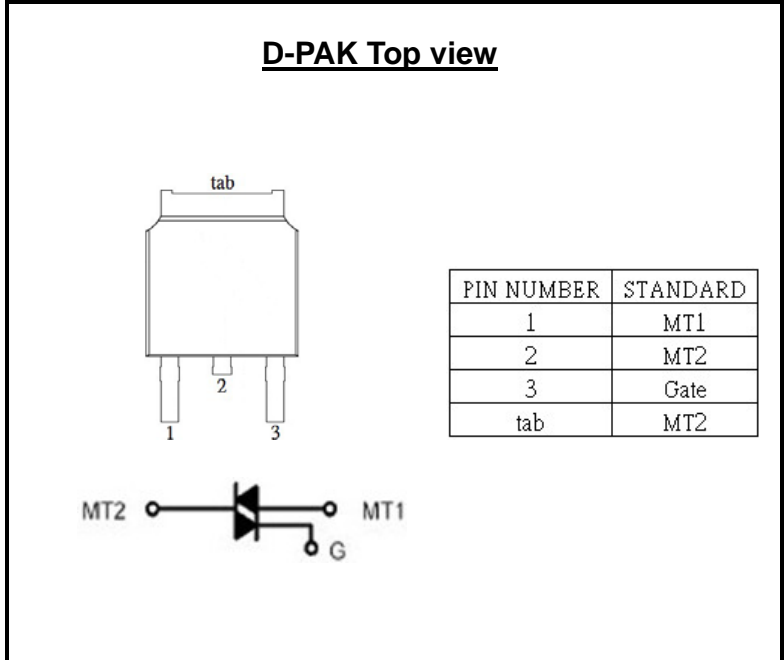
TRIACS
8 AMPERES RMS
800 VOLTS

FEATURES

- Passivated die for reliability and uniformity
- Three-quadrants triggering Triac
- 150°C Operation temperature
- Over 800V V_{DRM}/V_{RRM}
- Low triggering level V_{GT}/I_{GT} and Low holding current characteristics
- Qualified to AEC-Q101 Rev_C

APPLICATIONS

- Electronic thermostats
- General purpose motor controls
- Rectifier-fed DC inductive loads
- Power Tool
- AC power control



ELECTRICAL CHARACTERISTICS (T_j = 25°C, unless otherwise specified.)

Absolute Ratings

PARAMETER	SYMBOL	VALUE	UNIT
Peak repetitive off-state voltage (T _j = -40 to 150°C, Full sine wave, 50 to 60 Hz; Gate open) (Note 1)	V_{DRM} V_{RRM}	800 800	V
On-stage RMS current (Full sine wave, T _c = 110°C)	$I_{T(RMS)}$	8	A
Peak non-repetitive surge current (one full cycle 60 HZ, T _j = 25°C)	I_{TSM}	80	A
Circuit fusing consideration (t = 10ms)	I^2T	21	A ² S
Peak gate current	I_{GM}	2	A
Peak gate power	P_{GM}	5	W
Average gate power	$P_{G(AV)}$	0.5	W
Operating junction temperature range	T _j	-40 to +150	°C
Storage temperature range	T _{STG}	-40 to +150	°C

REV. 0, MAR-2017, KTXC43

Note :

(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.

T8M30T800HE

CHARACTERISTIC & CURVES (T_j = 25°C, unless otherwise specified.)



Thermal Characteristics

PARAMETER	SYMBOL	VALUE		UNIT
Junction to case with heatsink	R _{th(j-c)}	Max	5	°C/W
Junction to ambient (DC)	S ⁽¹⁾ = 0.5 cm ² R _{th(j-a)}	Typ	55	°C/W
Maximum lead temperature for soldering purposes (1/8" form case for 10 seconds)	T _L	Max	260	°C

1. S= Copper surface under tab.

Static Characteristics

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Threshold Voltage ⁽²⁾ @ T _j = 150°C	V _{to}	--	--	1	V
Dynamic resistors ⁽²⁾ @ T _j = 150°C	R _d	--	--	37	mΩ
Peak repetitive forward or reverse blocking current (V _{AK} = rated V _{DRM} and V _{RRM} , gate open)	T _j = 25°C I _{DRM}	--	--	5	uA
	T _j = 150°C I _{RRM}	--	--	2	mA

2. For both polarities of A2 referenced to A1.

ON Characteristics

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Peak forward on-state voltage (I _{TM} = 12A @ T _j = 25°C)	V _{TM}	--	--	1.5	V
V _D = V _{DRM} , R _L = 100Ω, T _j = 150°C	V _{GD}	0.2	--	--	V
Gate trigger current (V _{AK} = 12V, R _L = 100Ω)	I _{GT1}	--	--	35	mA
	I _{GT2}	--	--		
	I _{GT3}	--	--		
Gate trigger voltage (V _{AK} = 12V, R _L = 100Ω)	V _{GT1}	--	--	1	V
	V _{GT2}	--	--		
	V _{GT3}	--	--		
Holding current (V _{AK} = 12V, R _L = 100Ω)	I _{H1}	--	--	35	mA
	I _{H3}	--	--	50	
Latching current (V _{AK} = 12V, R _L = 100Ω)	I _{L1}	--	--	35	mA
	I _{L2}	--	--	45	
	I _{L3}	--	--	35	

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Dynamic Characteristics

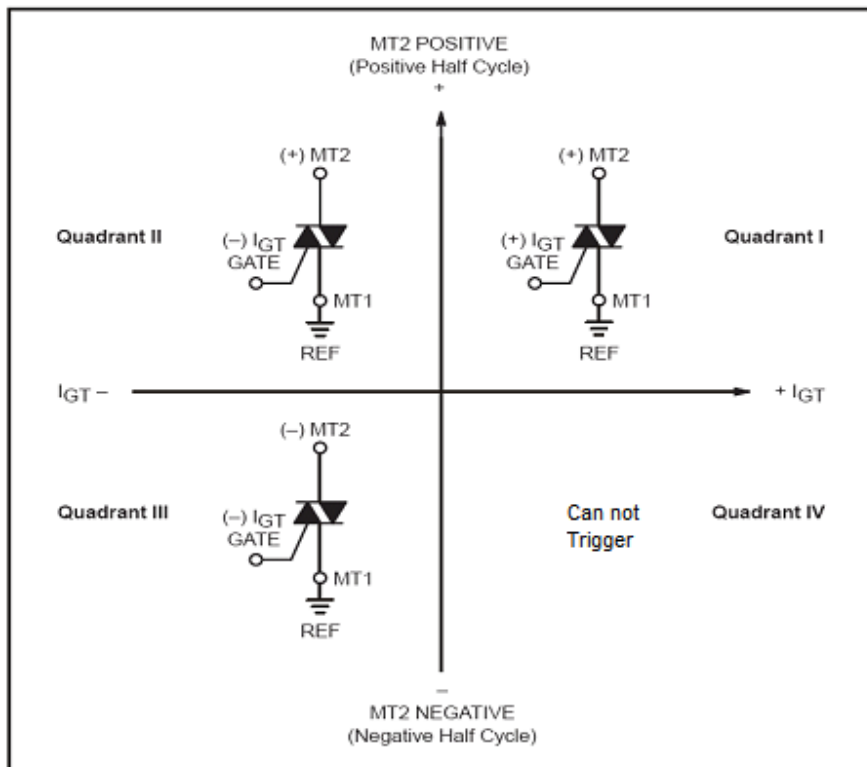
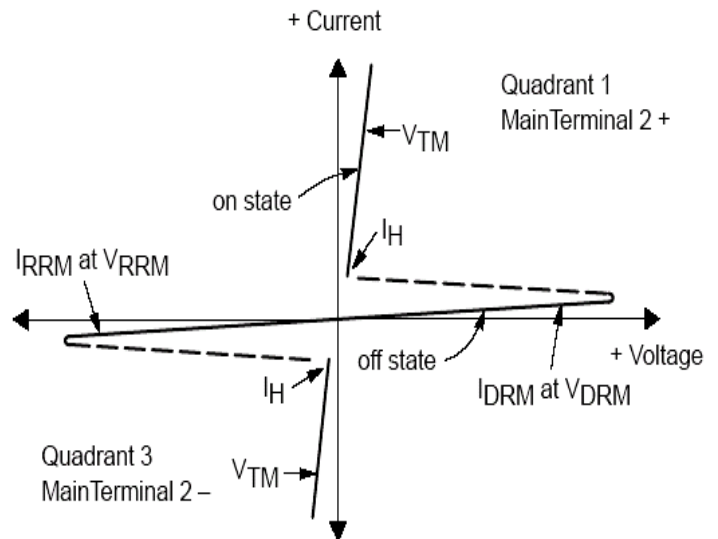
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Critical rate of rise of off-stage voltage (V _{AK} = 67% rated V _{DRM} , @ T _j = 150°C, gate open)	dv/dt	1000	--	--	V/us
Critical rate of rise of on-state current (V _{DRM} =maximum V _{DRM} , T _j = 150°C)	di/dt(s)	--	--	100	A/us
Rate of change of commutating current	Without snubber, VD=400V, T _j =150°C di/dt(c)	3	--	--	A/ms

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CHARACTERISTIC & CURVES (T_j = 25°C, unless otherwise specified.)



Symbol	Parameter
V _{DRM}	Peak Repetitive Forward Off State Voltage
I _{DRM}	Peak Forward Blocking Current
V _{RDM}	Peak Repetitive Reverse Off State Voltage
I _{RDM}	Peak Reverse Blocking Current
V _{TM}	Maximum On State Voltage
I _H	Holding Current



All polarities are referenced to MT1
With in -phase signal (using standard AC lines) quadrants I and III are used

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CHARACTERISTIC & CURVES ($T_j = 25^\circ\text{C}$, unless otherwise specified.)



Fig.1- Holding Current Variation

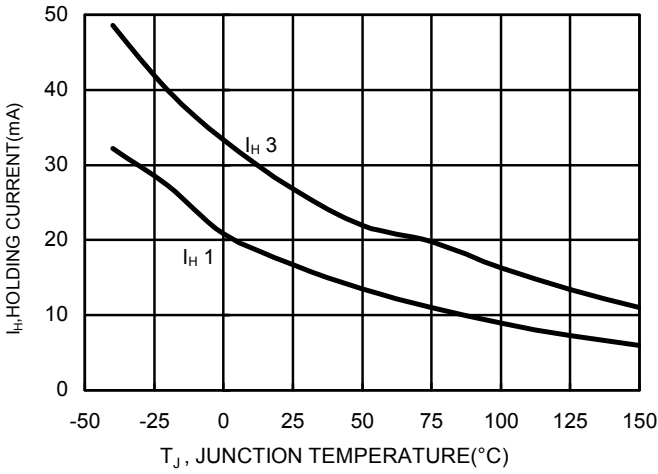


Fig.2- Gate Trigger Current Variation

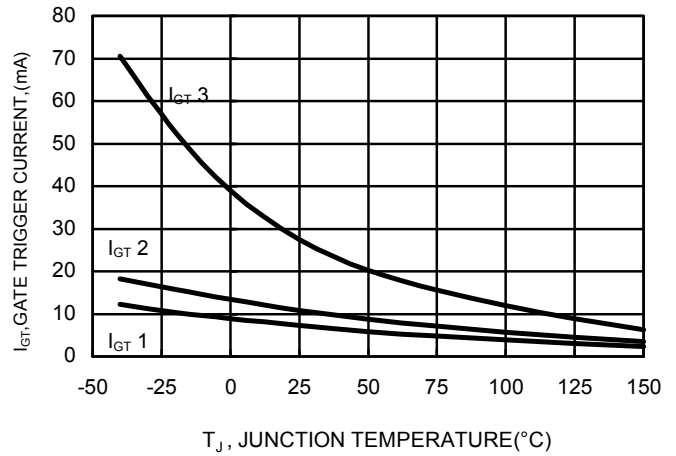


Fig.3- Gate Trigger Voltage Variation

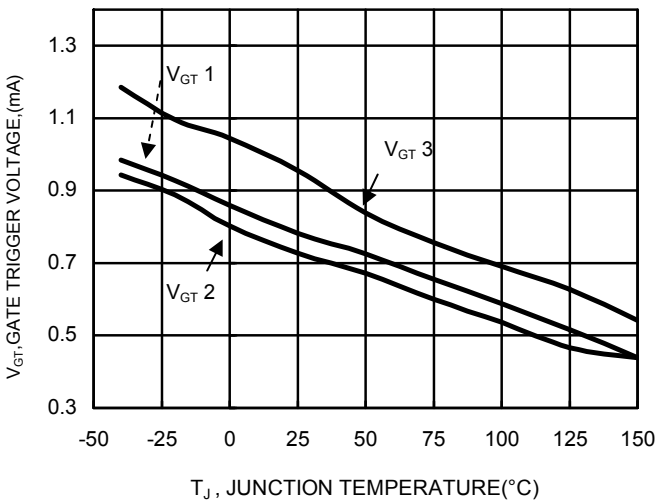


Fig.4- Typical Latching Current Versus Junction Temperature

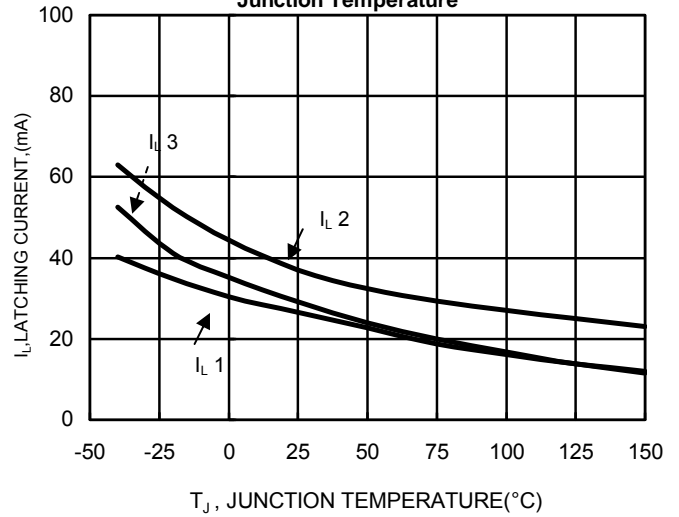


Fig.5- On-State Characteristics

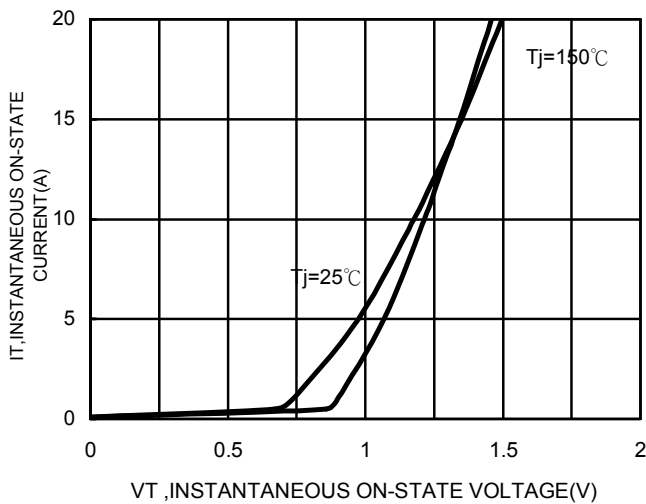
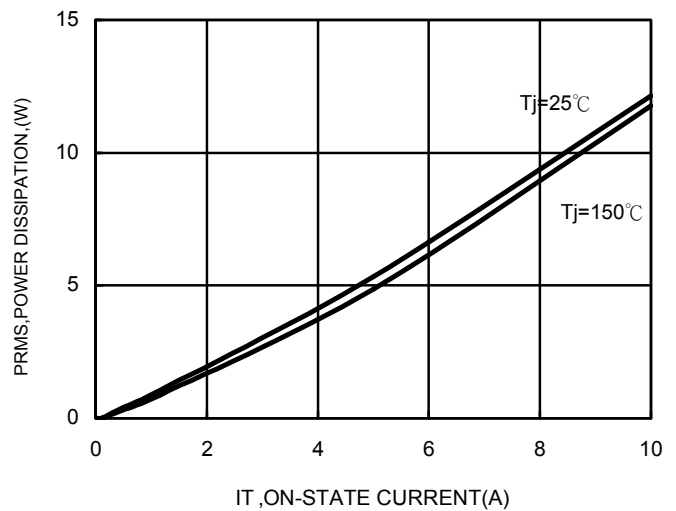
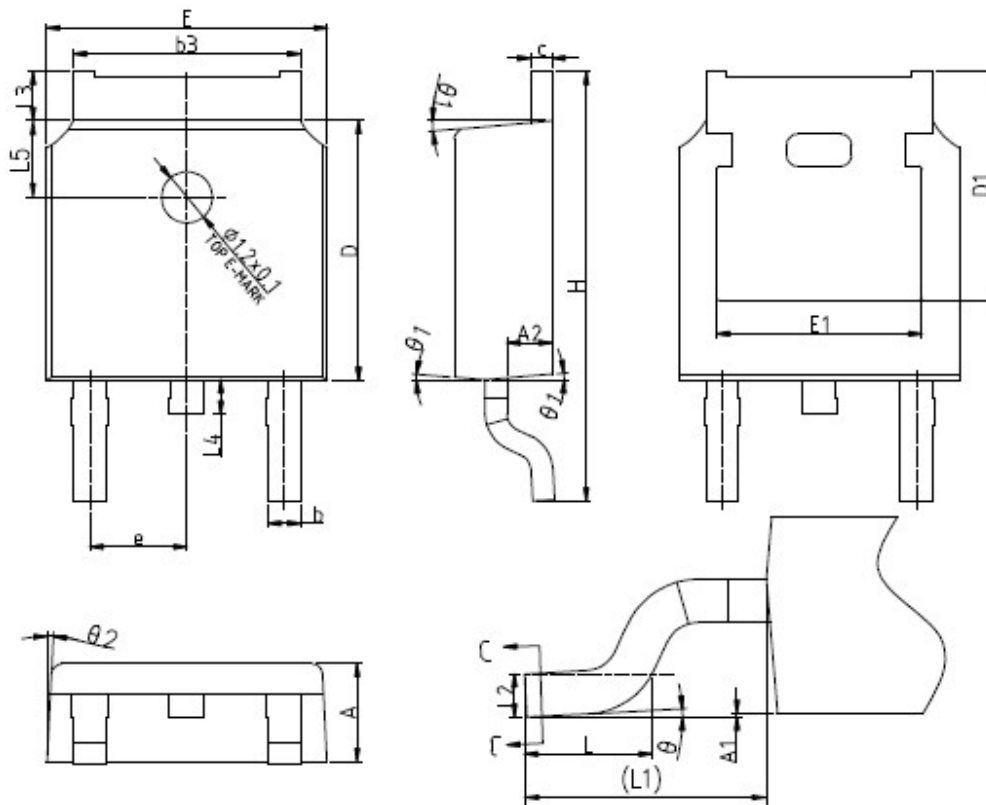


Fig.6- Power Dissipation versus I_T



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CHARACTERISTIC & CURVES (T_j = 25°C, unless otherwise specified.)



SYMBOL	mm		
	MIN	NOM	MAX
A	2.20	2.30	2.38
A1	0.00	-	0.10
A2	0.97	1.07	1.17
b	0.72	0.78	0.85
b1	0.71	0.76	0.81
b3	5.23	5.33	5.46
c	0.47	0.53	0.58
c1	0.46	0.51	0.56
D	6.00	6.10	6.20
D1	5.30REF		
E	6.50	6.60	6.70
E1	4.70	4.83	4.92
e	2.286BSC		
H	9.90	10.10	10.30
L	1.40	1.50	1.70
L1	2.90REF		
L2	0.51BSC		
L3	0.90	-	1.25
L4	0.60	0.80	1.00
L5	1.70	1.80	1.90
θ	0°	-	8°
θ_1	5°	7°	9°
θ_2	5°	7°	9°

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