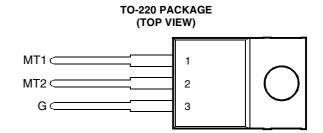
- Sensitive Gate Triacs
- 8 A RMS, 70 A Peak
- Glass Passivated Wafer
- 400 V to 800 V Off-State Voltage
- Max I_{GT} of 5 mA (Quadrant 1)



Pin 2 is in electrical contact with the mounting base.

MDC2ACA

absolute maximum ratings over operating case temperature (unless otherwise noted)

RATING	SYMBOL	VALUE	UNIT		
Repetitive peak off-state voltage (see Note 1)	TIC225D		400		
	TIC225M	V	600	V	
	TIC225S	V _{DRM}	700	v	
	TIC225N		800		
Full-cycle RMS on-state current at (or below) 70°C case temperature (see Note 2)			8	Α	
Peak on-state surge current full-sine-wave at (or below) 25°C case temperature (see Note 3)			70	Α	
Peak gate current			±1	Α	
Peak gate power dissipation at (or below) 85°C case temperature (pulse width ≤ 200 μs)			2.2	W	
Average gate power dissipation at (or below) 85°C case temperature (see Note 4)			0.9	W	
Operating case temperature range			-40 to +110	°C	
Storage temperature range			-40 to +125	°C	
Lead temperature 1.6 mm from case for 10 seconds			230	°C	

- NOTES: 1. These values apply bidirectionally for any value of resistance between the gate and Main Terminal 1.
 - 2. This value applies for 50-Hz full-sine-wave operation with resistive load. Above 70°C derate linearly to 110°C case temperature at the rate of 200 mA/°C.
 - 3. This value applies for one 50-Hz full-sine-wave when the device is operating at (or below) the rated value of on-state current. Surge may be repeated after the device has returned to original thermal equilibrium. During the surge, gate control may be lost.
 - 4. This value applies for a maximum averaging time of 20 ms.

electrical characteristics at 25°C case temperature (unless otherwise noted)

PARAMETER			TEST CONDIT	IONS	MIN	TYP	MAX	UNIT
I _{DRM}	Repetitive peak off-state current	$V_D = \text{rated } V_{DRM}$	I _G = 0	T _C = 110°C			±2	mA
I _{GT}		V _{supply} = +12 V†	$R_L = 10 \Omega$	t _{p(g)} > 20 μs		2.3	5	mA
	Gate trigger	$V_{\text{supply}} = +12 \text{ V}\dagger$	$R_L = 10 \Omega$	$t_{p(g)} > 20 \mu s$		-3.8	-20	
	current	V _{supply} = -12 V†	$R_L = 10 \Omega$	$t_{p(g)} > 20 \ \mu s$		-3	-10	
		V _{supply} = -12 V†	$R_L = 10 \Omega$	t _{p(g)} > 20 μs		6	30	

[†] All voltages are with respect to Main Terminal 1.

PRODUCT INFORMATION



electrical characteristics at 25°C case temperature (unless otherwise noted) (continued)

	PARAMETER	TEST CONDITIONS			MIN	TYP	MAX	UNIT
	<u> </u>	V _{supply} = +12 V†	$R_L = 10 \Omega$	t _{p(g)} > 20 μs		0.7	2	
V_{GT}	Gate trigger	V _{supply} = +12 V†	$R_L = 10 \Omega$	$t_{p(g)} > 20 \mu s$		-0.7	-2 -2	V
	voltage	$V_{\text{supply}} = -12 \text{ V}^{\dagger}$ $V_{\text{supply}} = -12 \text{ V}^{\dagger}$	$R_{L} = 10 \Omega$ $R_{L} = 10 \Omega$	$t_{p(g)} > 20 \ \mu s$ $t_{p(g)} > 20 \ \mu s$		-0.7 0.8	-2 2	
V _T	On-state voltage	I _T = ±12 A	I _G = 50 mA	(see Note 5)		±1.5	±2.1	V
l	Holding current	V _{supply} = +12 V†	I _G = 0	Init' I _T = 100 mA		2.3	20	mA
l _Н	riolaling current	$V_{\text{supply}} = -12 \text{ V}^{\dagger}$	$I_G = 0$	Init' $I_T = -100 \text{ mA}$		-1.6	-20	ША
l.	Latching current	$V_{\text{supply}} = +12 \text{ V}^{\dagger}$	(see Note 6)				30	mA
·L	$V_{\text{supply}} = -12 \text{ V}^{\dagger}$				-30			
dv/dt	Critical rate of rise of	V _{DBM} = Rated V _{DBM}	$I_G = 0$	T _C = 110°C		±20		V/µs
	off-state voltage	- DRIVI DRIVI	·G	10 110 0				., p0
du/dt	Critical rise of	V - Pated V	Ι _ ±12 Λ	$T_C = 70^{\circ}C$	±1	±4.5		V/µs
dv/dt _(c)	commutation voltage	V _{DRM} = Rated V _{DRM}	I _{TRM} = ± I ₂ A	(see Figure 6)	±1	±4.5		v/µs

[†] All voltages are with respect to Main Terminal 1.

thermal characteristics

PARAMETER		MIN	TYP	MAX	UNIT
$R_{\theta JC}$	Junction to case thermal resistance			2.5	°C/W
$R_{\theta JA}$	Junction to free air thermal resistance			62.5	°C/W

NOTES: 5. This parameter must be measured using pulse techniques, $t_p = \le 1$ ms, duty cycle ≤ 2 %. Voltage-sensing contacts separate from the current carrying contacts are located within 3.2 mm from the device body.

^{6.} The triacs are triggered by a 15-V (open-circuit amplitude) pulse supplied by a generator with the following characteristics: $R_G = 100 \ \Omega$, $t_{p(g)} = 20 \ \mu s$, $t_r = \le 15 \ ns$, $f = 1 \ kHz$

TYPICAL CHARACTERISTICS

GATE TRIGGER CURRENT vs

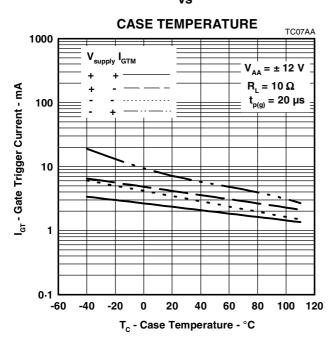


Figure 1.

HOLDING CURRENT vs

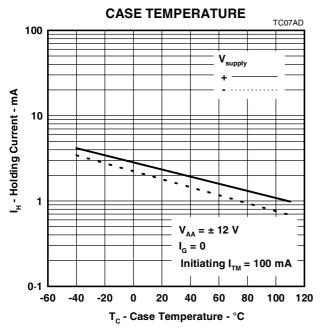


Figure 3.

GATE TRIGGER VOLTAGE vs

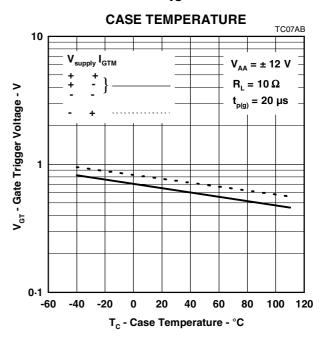
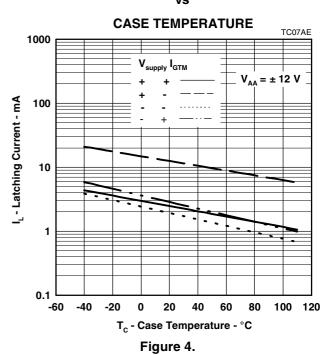


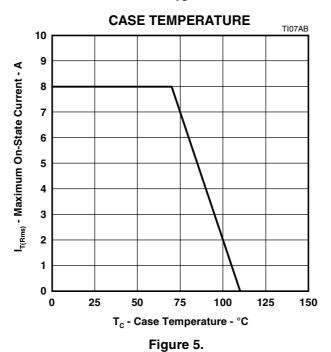
Figure 2.

LATCHING CURRENT vs

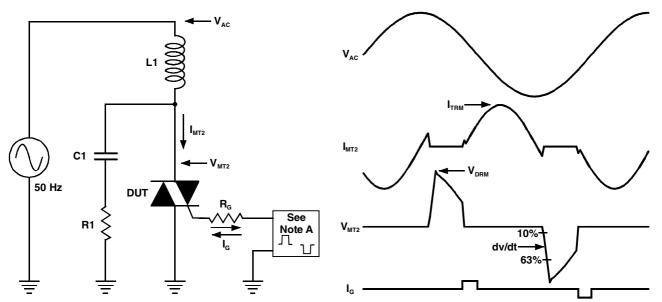


THERMAL INFORMATION

MAXIMUM RMS ON-STATE CURRENT vs



PARAMETER MEASUREMENT INFORMATION



NOTE A: The gate-current pulse is furnished by a trigger circuit which presents essentially an open circuit between pulses. The pulse is timed so that the off-state-voltage duration is approximately 800 µs.

PMC2AA

Figure 6.