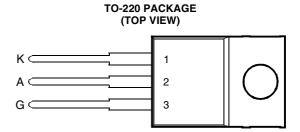
- 12 A Continuous On-State Current
- 100 A Surge-Current
- Glass Passivated Wafer
- 400 V to 800 V Off-State Voltage
- Max I_{GT} of 20 mA



Pin 2 is in electrical contact with the mounting base.

MDC1ACA

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

RATING		SYMBOL	VALUE	UNIT	
	TIC126D		400		
Depotitive peak off state valtage	TIC126M	V	600	V	
Repetitive peak off-state voltage	TIC126S	V _{DRM}	700		
	TIC126N		800		
	TIC126D		400	V	
Panatitiva nask ravarsa valtaga	TIC126M	V	600		
Repetitive peak reverse voltage	TIC126S	V _{RRM}	700		
	TIC126N		800		
Continuous on-state current at (or below) 70°C case temperature (see Note 1)	I _{T(RMS)}	12	Α		
Average on-state current (180° conduction angle) at (or below) 70°C case temperature		1	7.5	Α	
(see Note 2)		I _{T(AV)}	7.5	^	
Surge on-state current at (or below) 25°C case temperature (see Note 3)		I _{TM}	100	Α	
Peak positive gate current (pulse width ≤ 300 μs)		I _{GM}	3	Α	
Peak gate power dissipation (pulse width ≤ 300 μs)		P _{GM}	5	W	
Average gate power dissipation (see Note 4)		$P_{G(AV)}$	1	W	
Operating case temperature range		T _C	-40 to +110	°C	
Storage temperature range		T _{stg}	-40 to +125	°C	
Lead temperature 1.6 mm from case for 10 seconds		T _L	230	°C	

NOTES: 1. These values apply for continuous dc operation with resistive load. Above 70°C derate linearly to zero at 110°C.

- 2. This value may be applied continuously under single phase 50 Hz half-sine-wave operation with resistive load. Above 70°C derate linearly to zero at 110°C.
- 3. This value applies for one 50 Hz half-sine-wave when the device is operating at (or below) the rated value of peak reverse voltage and on-state current. Surge may be repeated after the device has returned to original thermal equilibrium.
- 4. This value applies for a maximum averaging time of 20 ms.



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

	PARAMETER		TEST CONDITION	ONS	MIN	TYP	MAX	UNIT
I _{DRM}	Repetitive peak off-state current	V _D = rated V _{DRM}		T _C = 110°C			2	mA
I _{RRM}	Repetitive peak reverse current	V _R = rated V _{RRM}	I _G = 0	T _C = 110°C			2	mA
I _{GT}	Gate trigger current	V _{AA} = 12 V	$R_L = 100 \Omega$	t _{p(g)} ≥ 20 μs		8	20	mA
V _{GT} Gate trigger voltage	$V_{AA} = 12 \text{ V}$ $t_{p(g)} \ge 20 \mu\text{s}$	$R_L = 100 \Omega$	T _C = - 40°C			2.5		
	$V_{AA} = 12 \text{ V}$ $t_{p(g)} \ge 20 \mu\text{s}$	$R_L = 100 \Omega$			0.8	1.5	٧	
	$V_{AA} = 12 \text{ V}$ $t_{p(g)} \ge 20 \mu\text{s}$	$R_L = 100 \Omega$	T _C = 110°C	0.2				
I _H	l⊔ Holding current	$V_{AA} = 12 \text{ V}$ Initiating I _T = 100 mA		T _C = - 40°C			100	mA
III TIOIGING GUNCH	riolaling durient	$V_{AA} = 12 \text{ V}$ Initiating $I_T = 100 \text{ mA}$					40	
V _T	On-state voltage	I _T = 12 A	(see Note 5)				1.4	V
dv/dt	Critical rate of rise of off-state voltage	V _D = rated V _D	I _G = 0	T _C = 110°C		400		V/µs

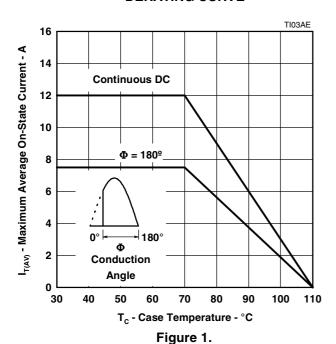
NOTE 5: This parameter must be measured using pulse techniques, $t_p = 300 \mu s$, duty cycle $\leq 2 \%$. Voltage sensing-contacts, separate from the current carrying contacts, are located within 3.2 mm from the device body.

thermal characteristics

	PARAMETER	MIN	TYP	MAX	UNIT
R _{θJC} Junction to case thermal	resistance			2.4	°C/W
$R_{\theta JA}$ Junction to free air therm	nal resistance			62.5	°C/W

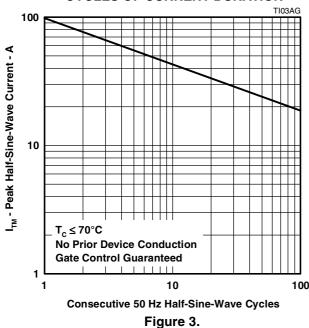
THERMAL INFORMATION

AVERAGE ON-STATE CURRENT DERATING CURVE

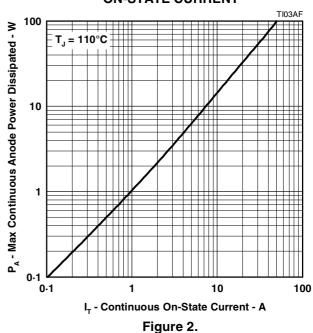


SURGE ON-STATE CURRENT vs

CYCLES OF CURRENT DURATION



MAX ANODE POWER LOSS vs ON-STATE CURRENT



TRANSIENT THERMAL RESISTANCE

CYCLES OF CURRENT DURATION

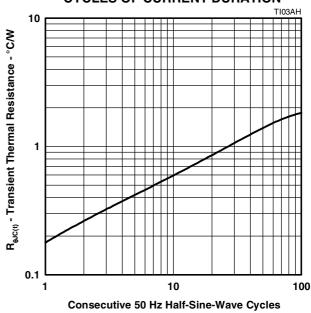


Figure 4.

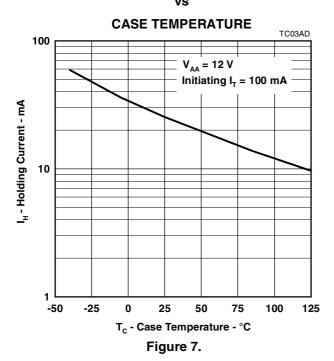
TYPICAL CHARACTERISTICS

GATE TRIGGER CURRENT vs

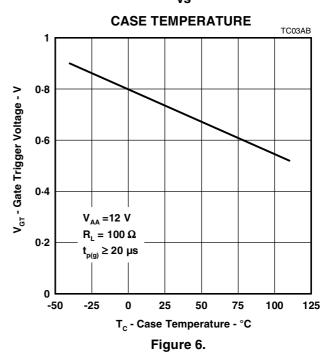
CASE TEMPERATURE TC03AA $V_{AA} = 12 V$ $R_i = 100 \Omega$ I_{GT} - Gate Trigger Current - mA t_{p(g)} ≥ 20 μs -50 -25 25 50 75 100 125 0

HOLDING CURRENT vs

T_c - Case Temperature - °C Figure 5.



GATE TRIGGER VOLTAGE



PEAK ON-STATE VOLTAGE

PEAK ON-STATE CURRENT

