



UCR16CM/A

TRIAC

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■ DESCRIPTION

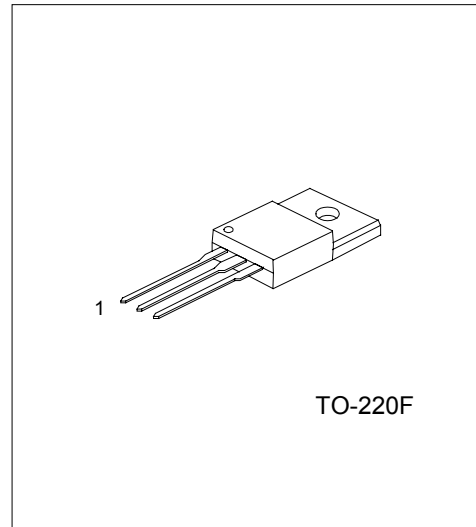
The **UCR16CM/A** is isolated, glass passivation type triac in full plastic TO-220F package for medium power use.

■ FEATURES

- * Repetitive Peak off-State Voltage: $V_{DRM} = 400, 600V$
- * R.M.S On-State Current: $I_T (RMS) = 16A$
- * High Commutating (dv / dt)

■ APPLICATIONS

- * Light Dimmer and Electric Flasher Unit.
- * Household Electrical Equipment Control.
- * Small Motor Control.
- * Copy Machine.
- * General Purpose Control Applications.



*Pb-free plating product number:
UCR16CML/UCR16CMAL

■ PIN CONFIGURATION

PIN	PIN NAME	DESCRIPTION
1	MT1	Terminal 1
2	MT2	Terminal 2
3	Gate	Gate Terminal

■ ORDERING INFORMATION

Ordering Number		Package	Packing
Normal	Lead free		
UCR16CM-TF3-T	UCR16CML-TF3-T	TO-220F	Tube
UCR16CMA-TF3-T	UCR16CMAL-TF3-T		

■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Repetitive Peak Off-State Voltage ^{Note *}	UCR16CM-4 UCR16CMA-4	V_{DRM}	400	V
	UCR16CM-6 UCR16CMA-6		600	
Non-Repetitive Peak Off-State Voltage ^{Note *}	UCR16CM-4 UCR16CMA-4	V_{DSM}	500	V
	UCR16CM-6 UCR16CMA-6		720	
RMS On-State Current (Commercial Frequency, Full Sine Waveform $T_c=100^\circ\text{C}$)		$I_{T(RMS)}$	16	A
Peak One Cycle Surge On-State Current (Non-Repetitive)	50Hz	I_{TSM}	155	A
	60Hz		170	
I^2t Limit Value		I^2t	121	A^2s
Peak Gate Power Dissipation		P_{GM}	5	W
Average Gate Power Dissipation		$P_{G(AV)}$	0.5	W
Peak Gate Voltage		V_{GM}	10	V
Peak Gate Current		I_{GM}	2	A
Junction Temperature		T_j	125	$^\circ\text{C}$
Storage Temperature		T_{STG}	-40 ~ +150	$^\circ\text{C}$

Note: * Gate Open.

■ ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$, unless otherwise specified)

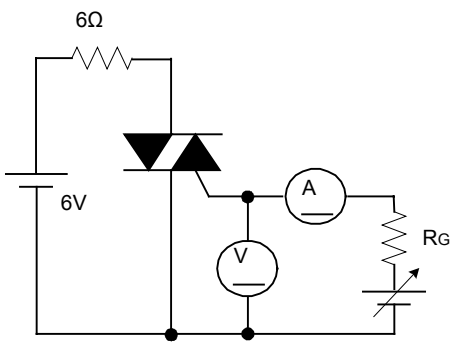
PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT			
Gate Trigger Voltage	I	V_{GT}	$V_D=6\text{V}$ $R_L=6\Omega$	MT2 (+), Gate (+)		1.5	V			
	II							MT2 (+), Gate (-)		
	III							MT2 (-), Gate (-)		
	IV							MT2 (-), Gate (+)		
Gate Trigger Current	UCR16CM	I_{GT}	$V_D=6\text{V}$ $R_L=6\Omega$	MT2 (+), Gate (+)		30	mA			
								II	MT2 (+), Gate (-)	
								III	MT2 (-), Gate (-)	
								IV	MT2 (-), Gate (+)	
	UCR16CMA							I	MT2 (+), Gate (+)	20
								II	MT2 (+), Gate (-)	20
								III	MT2 (-), Gate (-)	20
								IV	MT2 (-), Gate (+)	
Peak On-State Voltage		V_{TM}	$I_{TM}=25\text{A}$			1.5	V			
Gate Non-Trigger Voltage		V_{GD}	$T_j=125^\circ\text{C}$, $V_D=1/2V_{DRM}$	0.2			V			
Repetitive Peak Off-State Current		I_{DRM}	V_{DRM} Applied			2	mA			
Holding Current		I_H	$V_D=12\text{V}$, $I_{TM}=1\text{A}$		25	50	mA			
Critical Rate of Rise of Off-State Voltage	UCR16CM	dv / dt	$V_{DRM} = \text{Rated}$, $T_j = 125^\circ\text{C}$ Exponential Rise		300		V/ μs			
	UCR16CMA				200					
Critical Rate of Rise of Off-State Voltage at Commutation	UCR16CM	(dv / dt) c	$V_{DRM} = 400\text{V}$, $T_j = 125^\circ\text{C}$ (di / dt) c = -8A / ms	10			V/ μs			
	UCR16CMA			4						

■ THERMAL DATA

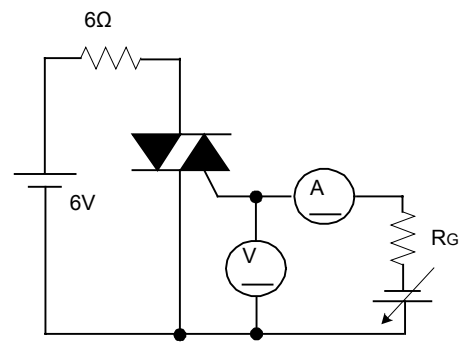
PARAMETER	SYMBOL	RATINGS	UNIT
Thermal Resistance Junction to Case	TO-220F θ_{Jc}	3	$^\circ\text{C}/\text{W}$

■ TEST CIRCUITS

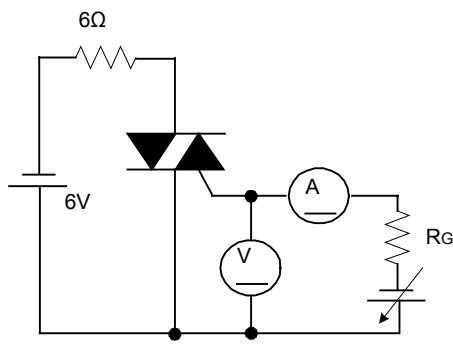
GATE TRIGGER CHARACTERISTICS



TEST PROCEDURE I



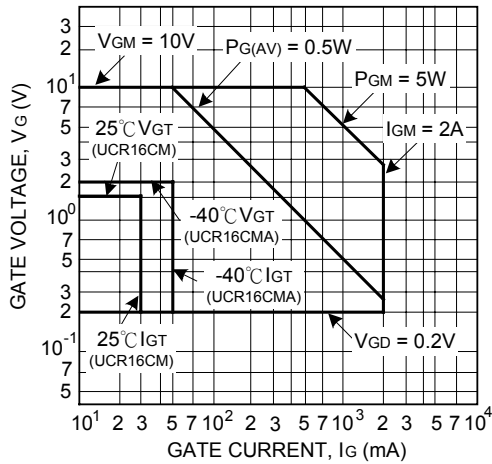
TEST PROCEDURE II



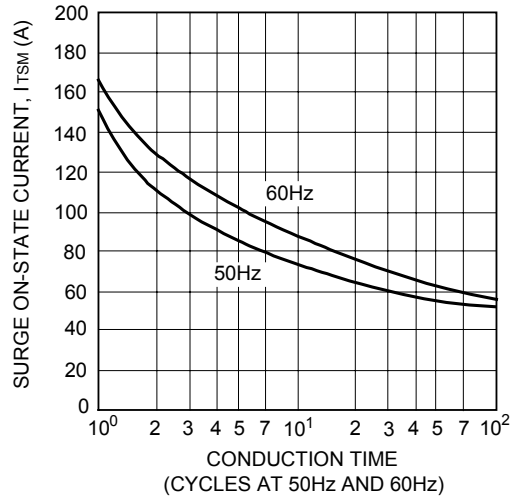
TEST PROCEDURE III

TYPICAL CHARACTERISTICS

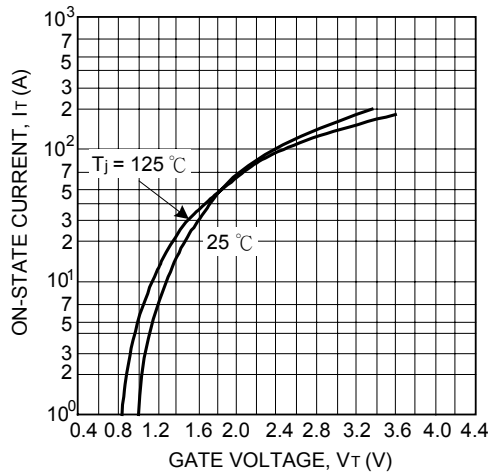
GATE TRIGGER CHARACTERISTICS



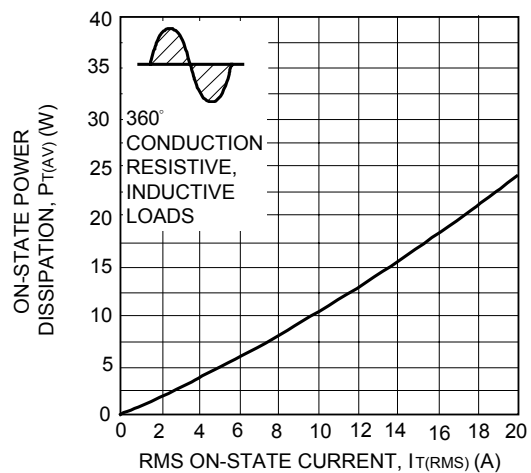
RATED SURGE ON-STATE CURRENT



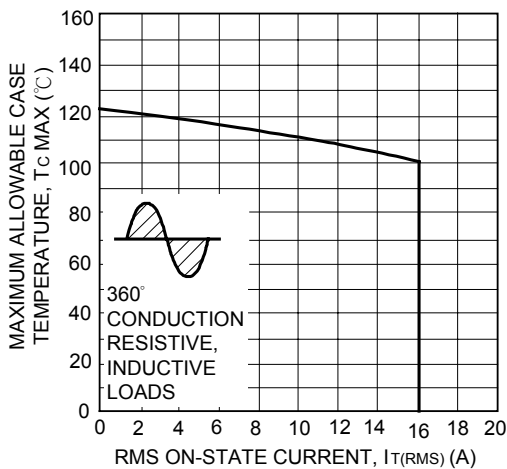
MAXIMUM ON-STATE CHARACTERISTICS



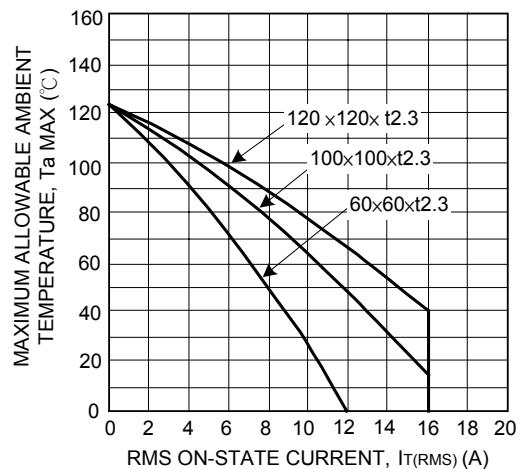
MAXIMUM ON-STATE POWER DISSIPATION



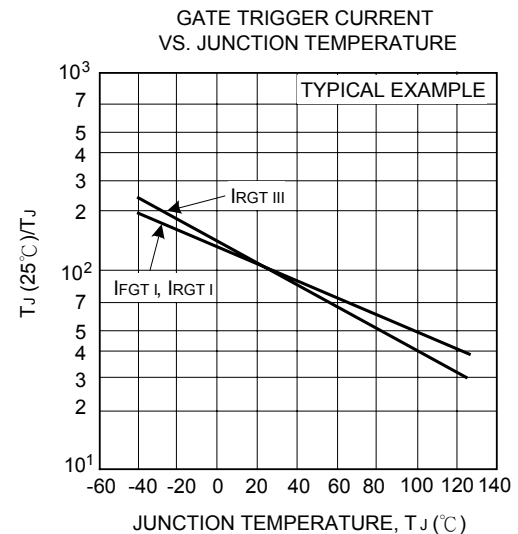
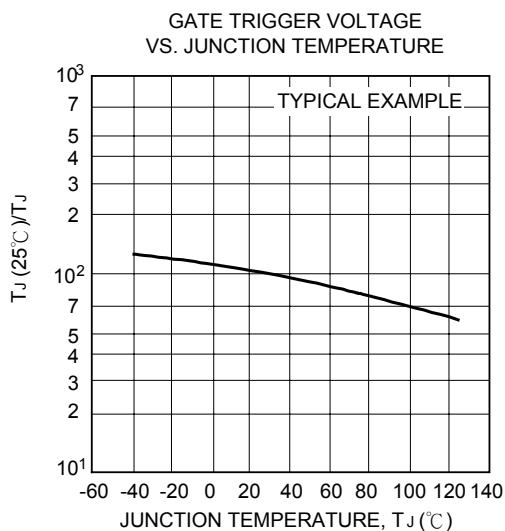
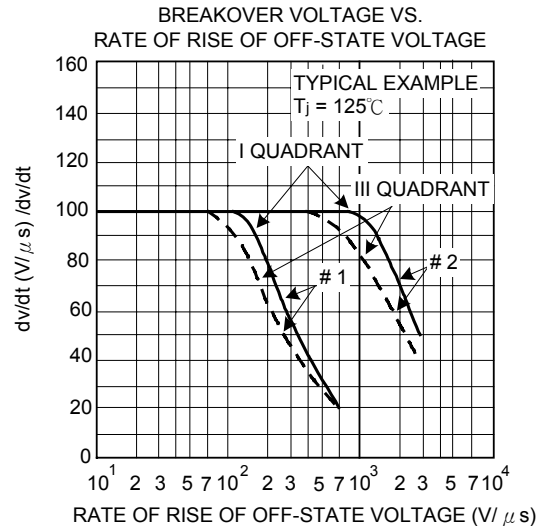
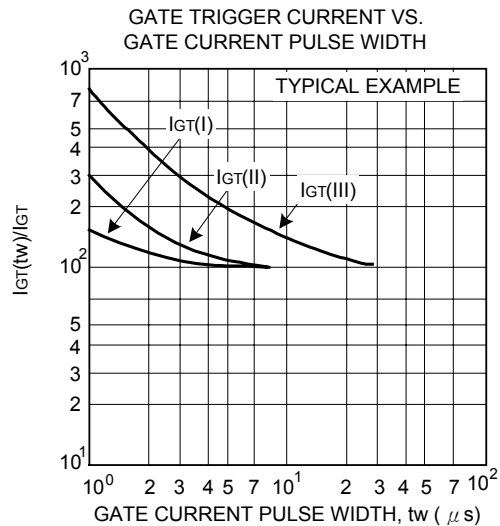
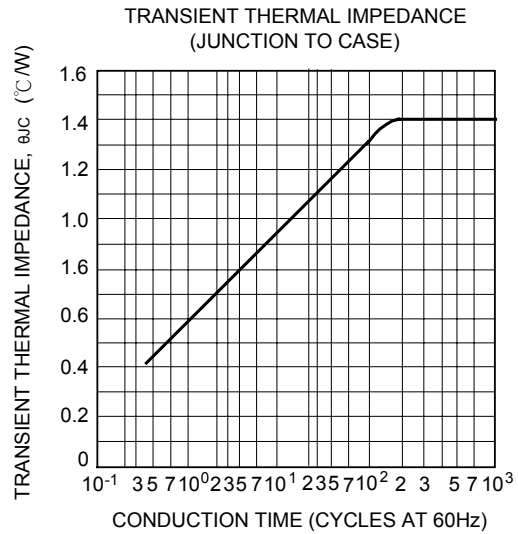
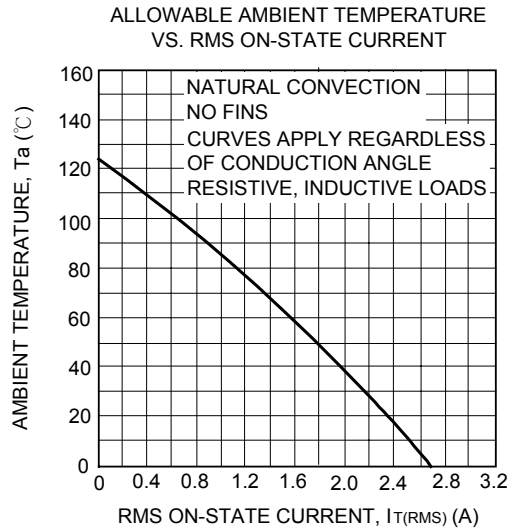
ALLOWABLE CASE TEMPERATURE VS. RMS ON-STATE CURRENT



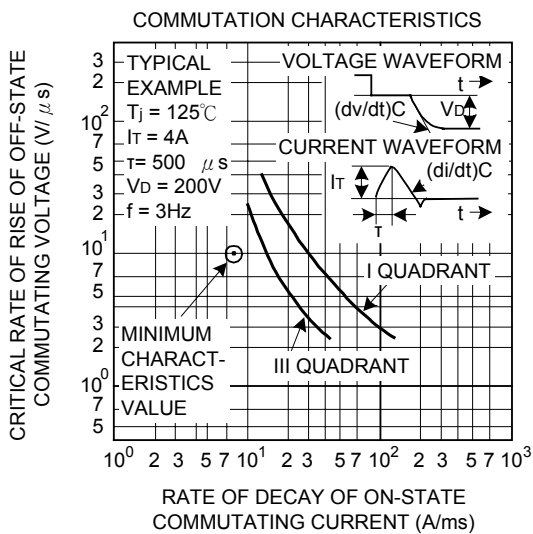
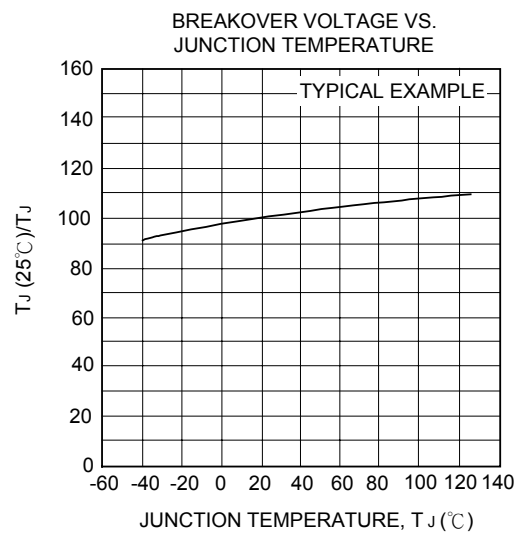
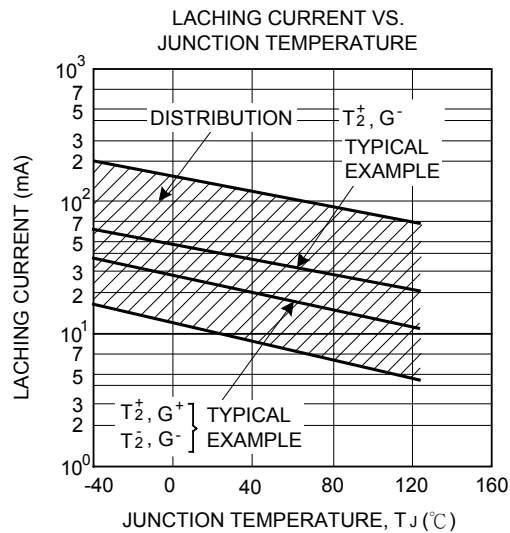
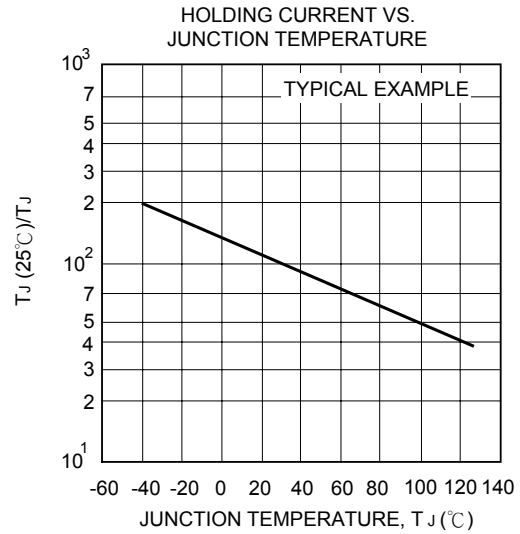
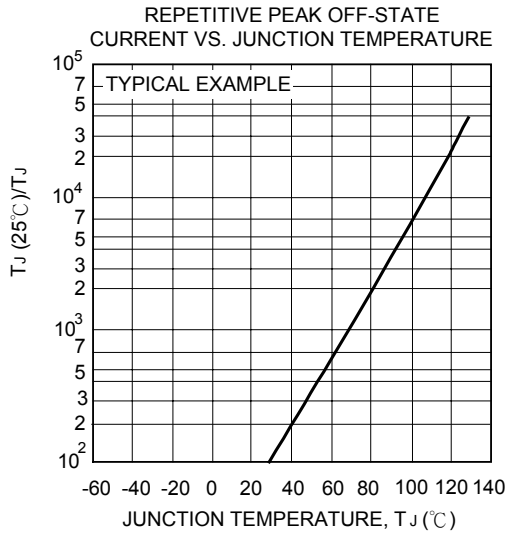
ALLOWABLE AMBIENT TEMPERATURE VS. RMS ON-STATE CURRENT



■ TYPICAL CHARACTERISTICS(Cont.)



■ TYPICAL CHARACTERISTICS(Cont.)



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