



UCR16CM/A

TRIAC

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DESCRIPTION

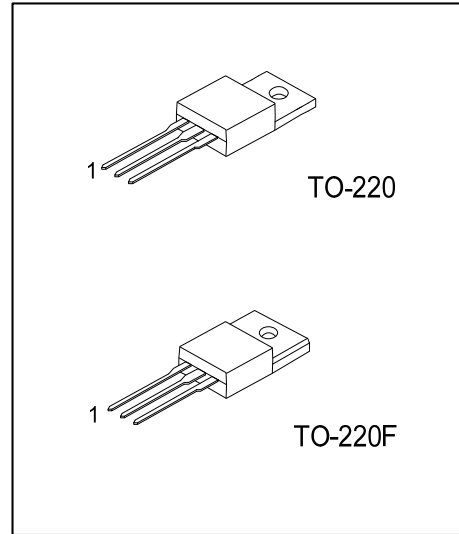
The **UCR16CM/A** is isolated glass passivation type triac for medium power use.

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.



ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UCR16CML-x-TA3-T	UCR16CMG-TA3-T	TO-220	MT1	MT2	G	Tube
UCR16CML-x-TF3-T	UCR16CMG-TF3-T	TO-220F	MT1	MT2	G	Tube
UCR16CMAL-x-TA3-T	UCR16CMAG-TA3-T	TO-220	MT1	MT2	G	Tube
UCR16CMAL-x-TF3-T	UCR16CMAG-TF3-T	TO-220F	MT1	MT2	G	Tube

Note: Pin Assignment: MT1: Terminal 1 MT2: Terminal 2 G: Gate

<p>UCR16CML-x-TA3-T</p> <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) V_{DRM}, V_{DSM} (4) Green Package 	<ul style="list-style-type: none"> (1) T: Tube (2) TA3: TO-220, TF3: TO-220F (3) V_{DRM}: 4: 400V, 6: 600V; V_{DSM}: 4: 500V, 6: 720V (4) L: Lead Free, G: Halogen Free and Lead Free
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MARKING

UCR16CM	UCR16CMA

■ 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.

■ THERMAL DATA

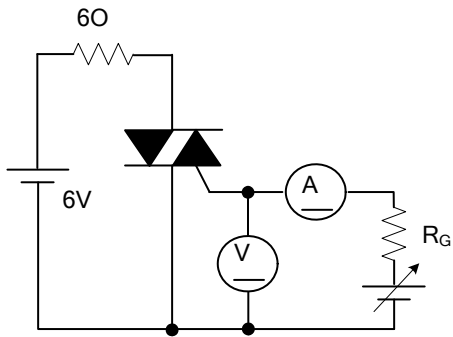
PARAMETER		SYMBOL	RATINGS	UNIT
Thermal Resistance Junction to Case	TO-220	θ_{JC}	1.4	$^\circ\text{C/W}$
	TO-220F		3.0	$^\circ\text{C/W}$

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

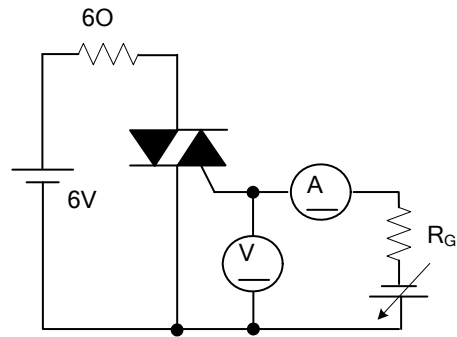
PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT		
Gate Trigger Voltage	I	V_{GT}	$V_D=6\text{V}, R_L=6\Omega$			1.5	V		
	II					MT2 (+), Gate (-)		1.5	
	III					MT2 (-), Gate (-)		1.5	
	IV					MT2 (-), Gate (+)		-	
Gate Trigger Current	UCR16CM	I_{GT}	$V_D=6\text{V}, R_L=6\Omega$			30	mA		
						II		MT2 (+), Gate (-)	30
						III		MT2 (-), Gate (-)	30
						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	$V_{DRM} = \text{Rated}, T_j = 125^\circ\text{C}$			300	V/ μs		
	UCR16CMA					Exponential Rise		200	
Critical Rate of Rise of Off-State Voltage at Commutation	UCR16CM	$(dv/dt)_c$	$V_{DRM} = 400\text{V}, T_j = 125^\circ\text{C}$			10	V/ μs		
	UCR16CMA					$(di/dt)_c = -8\text{A/ms}$		4	

■ TEST CIRCUITS

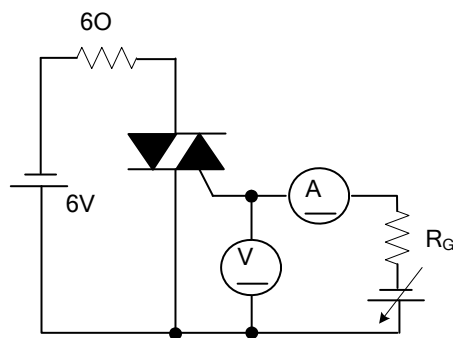
GATE TRIGGER CHARACTERISTICS



TEST PROCEDURE I



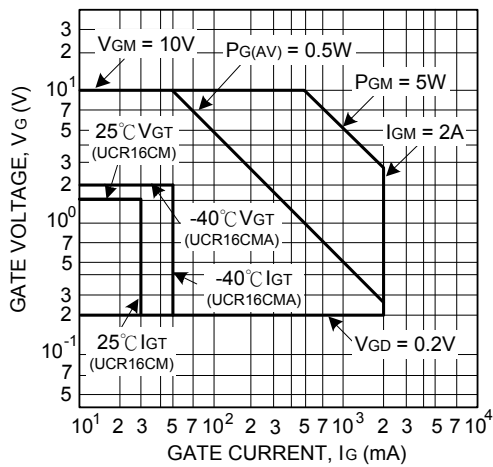
TEST PROCEDURE II



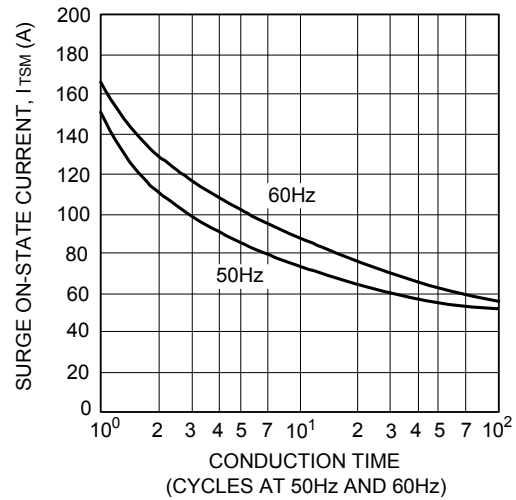
TEST PROCEDURE III

TYPICAL CHARACTERISTICS

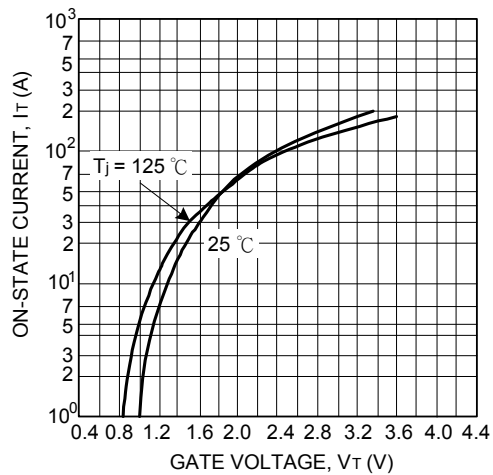
GATE TRIGGER CHARACTERISTICS



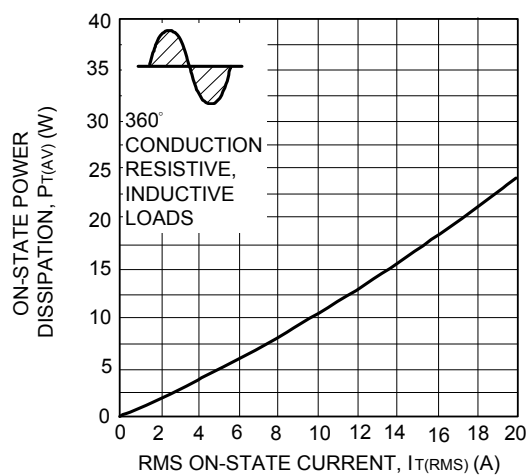
RATED SURGE ON-STATE CURRENT



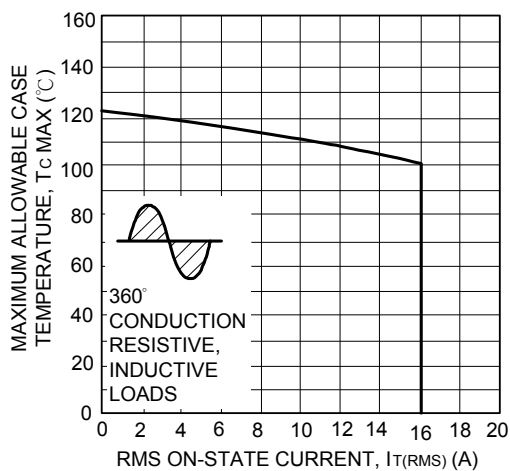
MAXIMUM ON-STATE CHARACTERISTICS



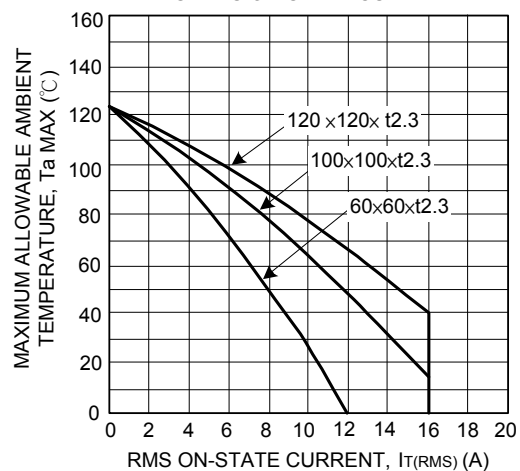
MAXIMUM ON-STATE POWER DISSIPATION



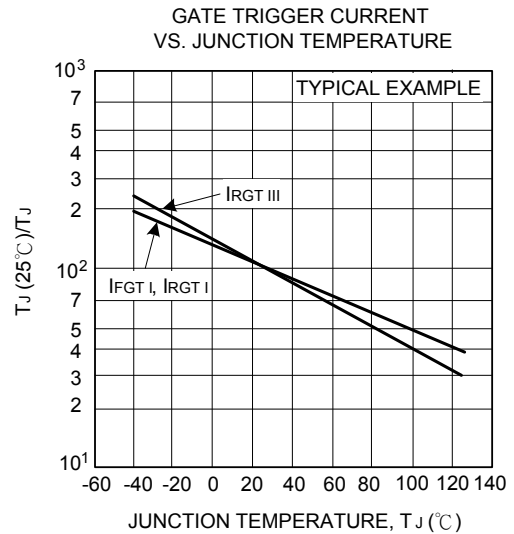
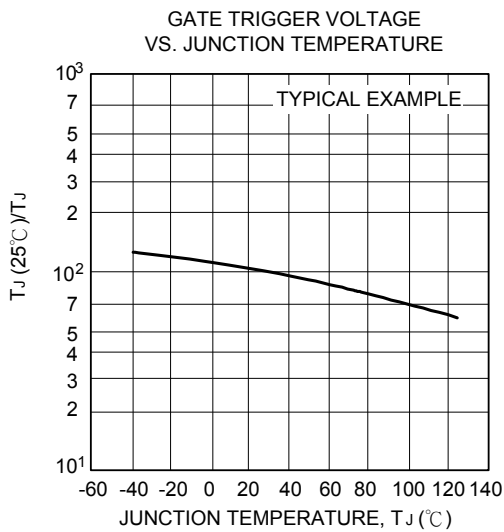
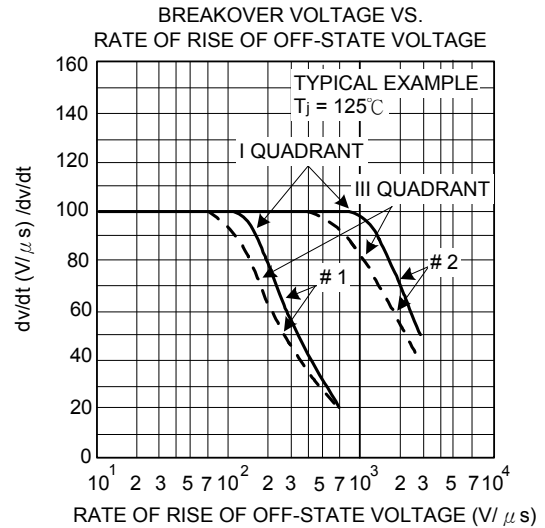
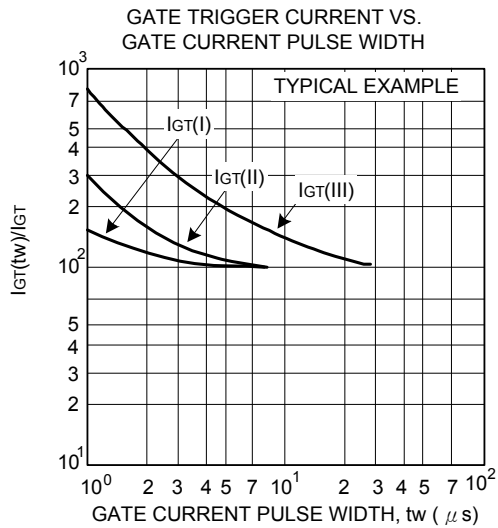
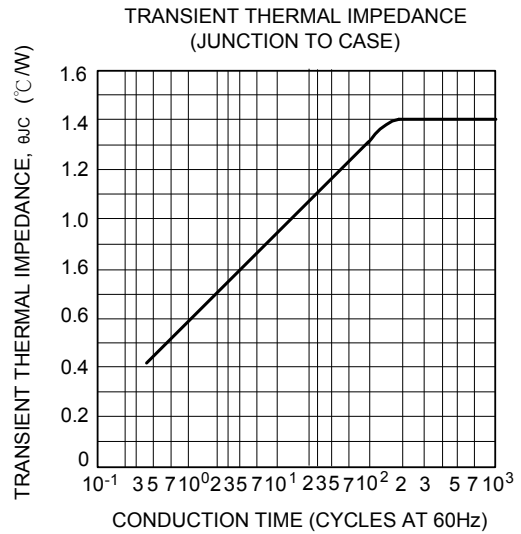
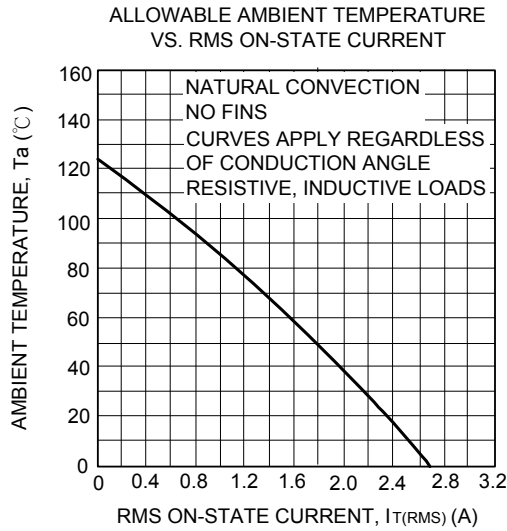
ALLOWABLE CASE TEMPERATURE VS. RMS ON-STATE CURRENT



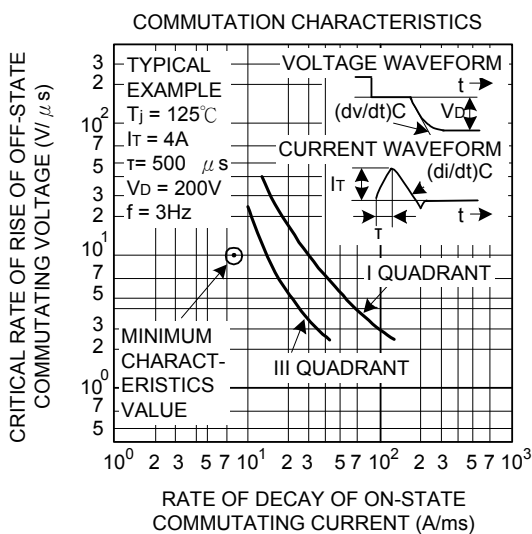
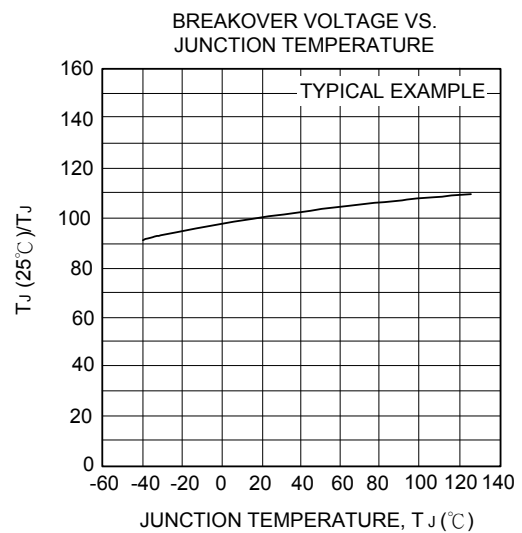
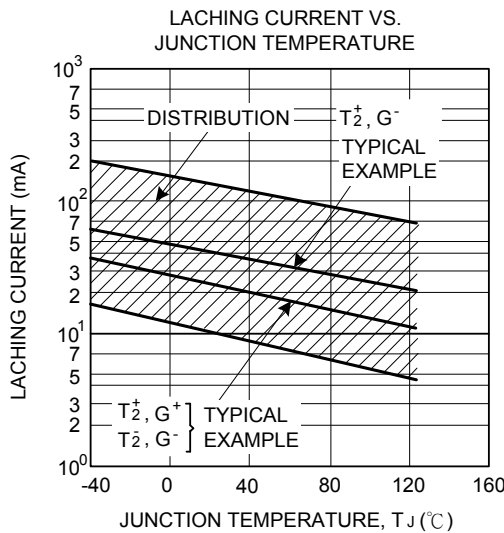
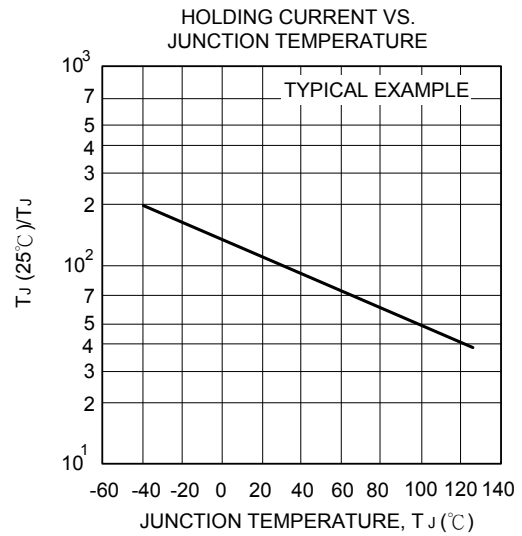
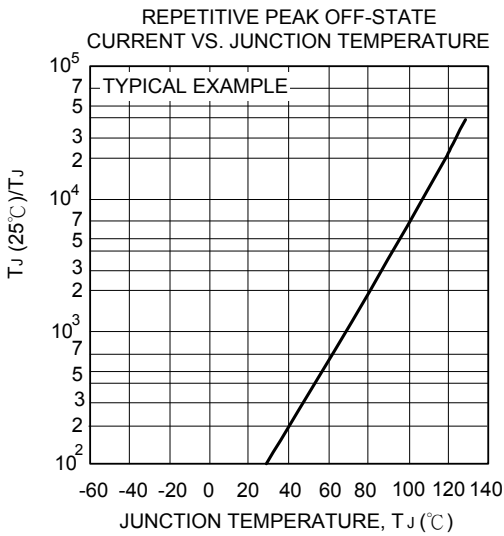
ALLOWABLE AMBIENT TEMPERATURE VS. RMS ON-STATE CURRENT



■ TYPICAL CHARACTERISTICS(Cont.)



■ TYPICAL CHARACTERISTICS(Cont.)



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