PRODUCT NAME : Q4008 8A 400V TRIAC

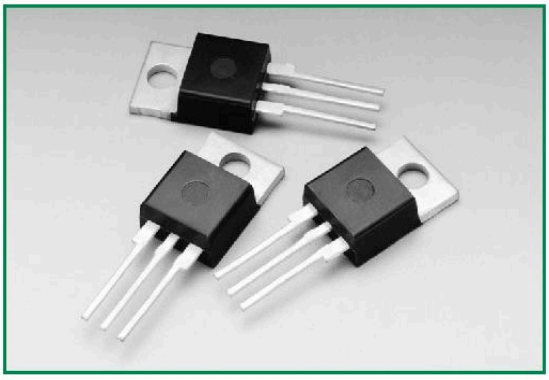
PRICE : Rs 35.00
SKU : RM1997

DESCRIPTION

Teccor® brand Thyristors
4 / 6 / 8 / 10 / 15 Amp Quadracs

Littelfuse
Expertise Applied | Answers Delivered

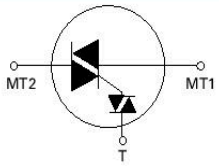
QxxxxLTx Series



Agency Approval

Agency	Agency File Number
	L Package : E71639

Schematic Symbol



Main Features

Symbol	Value	Unit
$I_{T(RMS)}$	4 to 15	A
V_{DRM} / V_{RRM}	400 to 600	V
DIAC V_{BO}	33 to 43	V

Description

The Quadrac is an internally triggered Triac designed for AC switching and phase control applications. It is a Triac and DIAC in a single package, which saves user expense by eliminating the need for separate Triac and DIAC components.

Standard type devices normally operate in Quadrants I & III triggered from AC line.

Alternistor type Quadracs are used in circuits requiring high dv/dt capability.

Features & Benefits

- RoHS Compliant
- Glass – passivated junctions
- Voltage capability up to 600 V
- Surge capability up to 200 A

Applications

Excellent for AC switching and phase control applications such as lighting and heating. Typical applications are AC solid-state switches, light dimmers, power tools, home/brown goods and white goods appliances.

Alternistor Quadracs (no snubber required) are used in applications with extremely inductive loads requiring highest commutation performance.

Internally constructed isolated package is offered for ease of heat sinking with highest isolation voltage.

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Absolute Maximum Ratings

Symbol	Parameter		Value					Unit
			Qxx04LT	Qxx06LT / Qxx06LTH	Qxx08LT / Qxx08LTH	Qxx10LT / Qxx10LTH	Qxx15LT / Qxx15LTH	
$I_{T(RMS)}$	RMS forward current	Qxx04LT: T_C = 95°C Qxx06LT/Qxx08LT/Qxx10LT: T_C = 90°C Qxx15LT: T_C = 80°C	4	6	8	10	15	A
I_{TSM}	Peak non-repetitive surge current	single half cycle; f = 50Hz; T_J (initial) = 25°C	46	65	83	100	167	A
		single half cycle; f = 60Hz; T_J (initial) = 25°C	55	80	100	120	200	
I^2t	I^2t value for fusing	t_p = 8.3ms	12.5	26.5	41	60	166	A^2s
di/dt	Critical rate-of-rise of on-state current	f = 60Hz; T_J =125°C	50	70			100	A/µs
I_{GM}	Peak gate current	T_J = 125°C	1.5					A
T_{stg}	Storage temperature range		-40 to 150					°C
T_J	Operating junction temperature range		-40 to 125					°C

Note: xx = voltage

Electrical Characteristics (T_J = 25°C, unless otherwise specified) – Standard Quadrac

Symbol	Test Conditions			Value					Unit
				Qxx04LT	Qxx06LT	Qxx08LT	Qxx10LT	Qxx15LT	
I_H	I_T = 200mA (initial)	MAX.		40	50	60	60	70	mA
dv/dt	$V_D = V_{DRM}$; gate open; T_J=100°C	MIN.	400V	75	150	175	200	300	V/µs
			600V	50	125	150	175	200	
	$V_D = V_{DRM}$; gate open; T_J=125°C	MIN.	400V	50	100	120	150	200	
			600V	50	85	100	120	150	
dv/dt(c)	di/dt(c) = 0.54 x $I_{T(rms)}$ / ms; T_J = 125°C	MIN.		3	4				V/µs
t_{gt}	(note 1)	TYP.		3					µs

(1) Reference test circuit in figure 10 and waveform in figure 11; C_T = 0.1µF with 0.1µs rise time.
Note: xx = voltage

Electrical Characteristics (T_J = 25°C, unless otherwise specified) – Alternistor Quadrac

Symbol	Test Conditions			Value				Unit
				Qxx06LTH	Qxx08LTH	Qxx10LTH	Qxx15LTH	
I_H	I_T = 20mA (initial)	MAX.		50	50	60	70	mA
dv/dt	$V_D = V_{DRM}$; gate open; T_J=100°C	MIN.	400V	575		925		V/µs
			600V	425		775		
	$V_D = V_{DRM}$; gate open; T_J=125°C	MIN.	400V	450		700		
			600V	350		600		
dv/dt(c)	di/dt(c) = 0.54 x $I_{T(rms)}$ / ms; T_J = 125°C	MIN.		25		30		V/µs
t_{gt}	(note 1)	TYP.		3				µs

(1) Reference test circuit in figure 10 and waveform in figure 11; C_T = 0.1µF with 0.1µs rise time.
Note: xx = voltage

Trigger DIAC Specifications

Symbol	Test Conditions		Value	Unit
ΔV_{BO}	Breakover Voltage Symmetry	MAX.	3	V
V_{BO}	Breakover Voltage, forward and reverse	MIN.	33	V
		MAX.	43	
[ΔV±]	Dynamic Breakback Voltage, forward and reverse (note 1)	MIN.	5	V
I_{BO}	Peak Breakover Current	MAX.	25	uA
C_T	Trigger Firing Capacitance	MAX.	0.1	µF

(1) Reference test circuit in figure 10 and waveform in figure 11.

Static Characteristics

Symbol	Test Conditions			Value	Unit
V_{TM}	$I_T = 1.41 \times I_{T(rms)}$ A; t_p = 380µs		MAX.	1.6	V
I_{DRM} / I_{RRM}	V_{DRM} / V_{RRM}	T_J = 25°C	MAX.	10	µA
		T_J = 100°C		500	
		T_J = 125°C		2000	

Thermal Resistances

Symbol	Parameter		Value	Unit
$R_{\theta(J-C)}$	Junction to case (AC)	Qxx04LT	3.6	°C/W
		Qxx06LT / Qxx06LTH	3.3	
		Qxx08LT / Qxx08LTH	2.8	
		Qxx10LT / Qxx10LTH	2.6	
		Qxx15LT / Qxx15LTH	2.1	
$R_{\theta(J-A)}$	Junction to ambient		50	°C/W

Note : xx = voltage