

**DESCRIPTION:**

The T0410H-8F triac is suitable for general purpose AC switching. It can be used as an ON/OFF function in applications such as heating regulation, induction motor starting circuits, for phase control operation in light dimmers, motor speed controllers. Compared to traditional triacs, T0410H-8F provides a very high switching capability up to junction temperatures of 150°C. It can be driven directly through the MCU I/O port. By using an external plastic package, T0410H-8F provides a rated insulation voltage of 2000 VRMS, complying with UL standards (File ref: E252906). Package TO-220F is RoHS compliant.

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	4	A
V_{DRM}/V_{RRM}	800	V
$I_{GT} / /$	10/10/10	mA

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40-150	
Operating junction temperature range	T_j	-40-150	
Repetitive peak off-state voltage ($T_j=25^\circ\text{C}$)	V_{DRM}	800	V
Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$)	V_{RRM}	800	V
RMS on-state current ($T_C \leq 129^\circ\text{C}$)	$I_{T(RMS)}$	4	A
Non repetitive surge peak on-state current (full cycle, $t_p=20\text{ms}$, $T_j=25^\circ\text{C}$)	I_{TSM}	40	A
Non repetitive surge peak on-state current (full cycle, $t_p=16.6\text{ms}$, $T_j=25^\circ\text{C}$)		44	
I^2t value for fusing ($t_p=10\text{ms}$, $T_j=25^\circ\text{C}$)	I^2t	8	A^2s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$, $f=100\text{Hz}$, $T_j=150^\circ\text{C}$)	di/dt	50	$\text{A}/\mu\text{s}$

Peak gate current ($t_p=20\mu s$, $T_j=150$)	I_{GM}	4	A
Average gate power dissipation ($T_j=150$)	$P_{G(AV)}$	1	W
Peak gate power	P_{GM}	10	W
Peak pulse voltage ($T_j=25$; non-repetitive, off-state; FIG. 7)	V_{pp}	3	kV

ELECTRICAL CHARACTERISTICS ($T_j=25$ unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
I _{GT}	V _D =12V R _L =33Ω	- -	MAX.	10	mA
V _{GT}		- -	MAX.	1	V
V _{GD}	V _D =V _{DRM} T _j =150 R _L =3.3kΩ	- -	MIN.	0.2	V
I _L	I _G =1.2I _{GT}	-	MAX.	20	mA
				35	
I _H	I _T =100mA		MAX.	20	mA
dV/dt	V _D =540V Gate Open T _j =150		MIN.	150	V/μs
(dI/dt) _c	(dV/dt) _c =20V/μs, T _j =150		MIN.	1	A/ms
t _{on}	I _G =20mA I _A =200mA I _R =20mA T _j =25		TYP.	2.5	μs
t _{off}				25	

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=5.5A$ $t_p=380\mu s$	$T_j=25$	1.4	V
V_{TO}	Threshold voltage	$T_j=150$	0.6	V
R_D	Dynamic resistance	$T_j=150$	129	$m\Omega$
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25$	5	μA
I_{RRM}		$T_j=150$	1	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	4	/W
$R_{th(j-a)}$	junction to ambient (AC)	60	/W

FIG.7 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



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