# isc Triacs   **TMA166S-L**

APPLICATIONS

▪ Residential and commercial appliances: vacuum cleaners, rice cookers, TVs, home entertainment

▪ White goods: washing machines

▪ Office automation power control, photocopiers

▪ Motor control for small tools

▪ Temperature control, light dimmers, electric blankets

▪ General use switching mode power supplies (SMPS)

FEATURES

• I_T (RMS) : 16 A

• V_{DRM} : 600 V

• I_{FGTI}, I_{RGTI}, I_{RGTIII} : 30mA

• Insulated Type
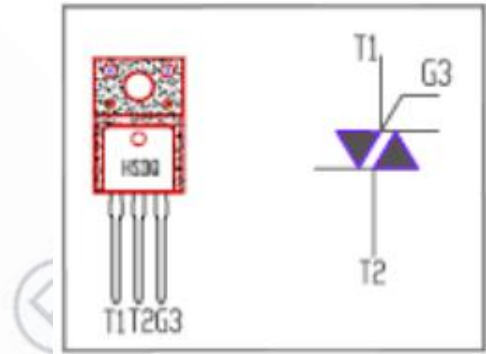
ABSOLUTE MAXIMUM RATINGS(Ta=25℃)

SYMBOL	PARAMETER	Value	UNIT
V_{DRM}	Repetitive peak off-state voltage	600	V
V_{RRM}	Repetitive peak reverse voltage	600	V
$I_{T(RMS)}$	RMS on-state current (full sine wave) Tc=80℃	16	A
I_{TSM}	Non repetitive surge peak on-state current (half sine cycle, Tj=25℃) F=50HZ t=20ms	160	A
I_{GM}	Peak gate current tp=20us, Tj=125℃	4	A
I^2t	I^2t Value for fusing tp=10ms	144	A^2S
$P_{G(AV)}$	Average gate power dissipation	1	W
di/dt	Repetitive rate of rise of on-state currentafter triggering ITM=20A IG=70mA dIG/dt 50mA/ms Tj=125℃	50	A/us
T_j	Operating junction temperature	-40-125	℃
T_{stg}	Storage temperature	-40~150	℃
$R_{th(j-c)}$	Thermal resistance, junction to case	1.3	℃/W

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ELECTRICAL CHARACTERISTICS (T$_C$=25℃ unless otherwise specified)

SYMBOL	PARAMETER		CONDITIONS	MIN	MAX	UNIT
I$_{RRM}$	Repetitive peak reverse current		V$_R$=V$_{RRM}$, V$_R$=V$_{RRM}$, Tj=125℃		0.1 2	mA
I$_{DRM}$	Repetitive peak off-state current		V$_D$=V$_{DRM}$, V$_D$=V$_{DRM}$, Tj=125℃		0.1 2	mA
I$_{GT}$	Gate trigger current	Ⅰ-Ⅱ-Ⅲ	V$_D$=12V; R$_L$= 20Ω		30	mA
I$_H$	Holding current		I$_{GT}$= 0.5A,		60	mA
V$_{GT}$	Gate trigger voltage	Ⅰ-Ⅱ-Ⅲ	V$_D$=12V; R$_L$= 20Ω		1.5	V
dv/dt			VD=67% VDRM gate open(Tj=125℃)	1000		V/us
(dv/dt)c	Critical Rising Rate of Off-State Voltage during Commutation		Tj=125℃	10		V/us
V$_{TM}$	On-state voltage		I$_{TM}$=32A , tp=380µs		1.5	V

TO-220F outline dimensional drawing