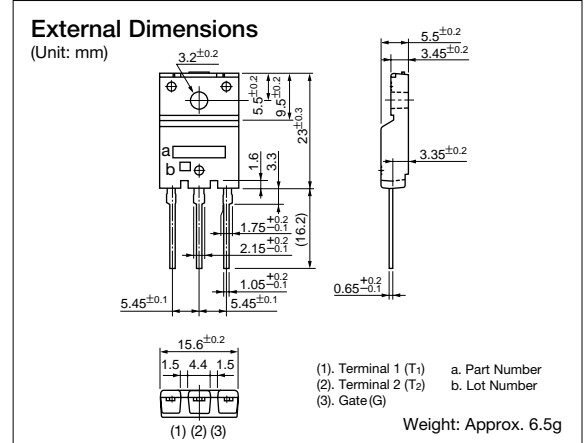


# TO-3PF 16A Triac

## TM1641B-L, TM1661B-L

### Features

- Repetitive peak off-state voltage:  $V_{DRM}=400, 600V$
- RMS on-state current:  $I_{T(RMS)}=16A$
- Gate trigger current:  $I_{GT}=30mA$  max (MODE I, II, III)
- Rate-of-rise of off-state commutation voltage:  $(dv/dt)_c=10V/\mu s$  min.
- Isolation voltage:  $V_{ISO}=2000V(AC, 1min.)$
- UL approved type available



### Absolute Maximum Ratings

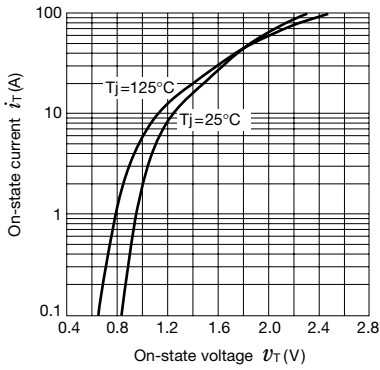
Parameter	Symbol	Ratings		Unit	Conditions
		TM1641B-L	TM1661B-L		
Repetitive peak off-state voltage	$V_{DRM}$	400	600	V	
RMS on-state current	$I_{T(RMS)}$	16		A	Conduction angle 360°, $T_c=92.5^\circ C$
Surge on-state current	$I_{TSM}$	160		A	50Hz full-cycle sine wave, Peak value, Non-repetitive, $T_j=125^\circ C$
Peak gate voltage	$V_{GM}$	10		V	$f \geq 50Hz$ , duty $\leq 10\%$
Peak gate current	$I_{GM}$	2		A	$f \geq 50Hz$ , duty $\leq 10\%$
Peak gate power loss	$P_{GM}$	5		W	$f \geq 50Hz$ , duty $\leq 10\%$
Average gate power loss	$P_{G(AV)}$	0.5		W	
Junction temperature	$T_j$	-40 to +125		$^\circ C$	
Storage temperature	$T_{stg}$	-40 to +125		$^\circ C$	
Isolation voltage	$V_{ISO}$	2000		Vrms	50Hz Sine wave, RMS, Terminal to Case, 1 min.

### Electrical Characteristics

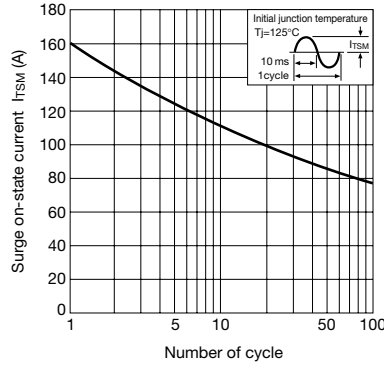
Parameter	Symbol	Ratings			Unit	Conditions	
		min	typ	max			
Off-state current	$I_{DRM}$		0.1	2.0	mA	$V_D=V_{DRM}$ , $R_{GK}=\infty$ , $T_j=125^\circ C$	
				0.1		$V_D=V_{DRM}$ , $R_{GK}=\infty$ , $T_j=25^\circ C$	
On-state voltage	$V_{TM}$			1.6	V	$I_{TM}=20A$ , $T_c=25^\circ C$	
Gate trigger voltage	$V_{GT}$	I	0.8	1.5	V	$V_D=6V$ , $R_L=10\Omega$ , $T_c=25^\circ C$	$T_2^+$ , $G^+$
		II	0.7	1.5			$T_2^+$ , $G^-$
		III	0.8	1.5			$T_2^-, G^-$
		IV	1.0				$T_2^-, G^+$
Gate trigger current	$I_{GT}$	I	12	30	mA	$V_D=6V$ , $R_L=10\Omega$ , $T_c=25^\circ C$	$T_2^+$ , $G^+$
		II	16	30			$T_2^+$ , $G^-$
		III	25	30			$T_2^-, G^-$
		IV	70				$T_2^-, G^+$
Gate non-trigger voltage	$V_{GD}$	0.2			V	$V_D=1/2 \times V_{DRM}$ , $T_j=125^\circ C$	
Holding current	$I_H$		25		mA	$T_j=25^\circ C$	
Rate-of-rise of off-state commutation voltage	$(dv/dt)_c$	10			V/ $\mu s$	$V_D=400V$ , $T_j=125^\circ C$	
Thermal resistance	$R_{th}$			1.8	$^\circ C/W$	Junction to case	

# TM1641B-L, TM1661B-L

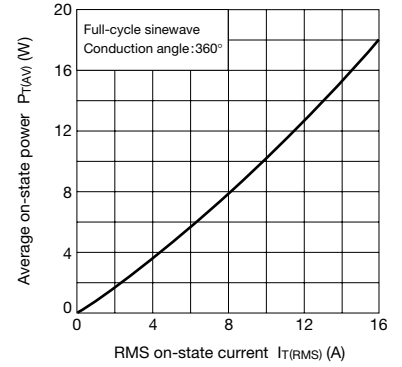
$v_T - i_T$  Characteristics (max)



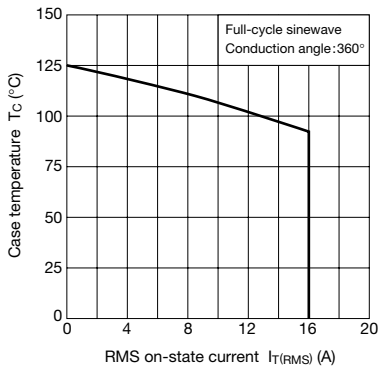
$I_{TSM}$  Ratings



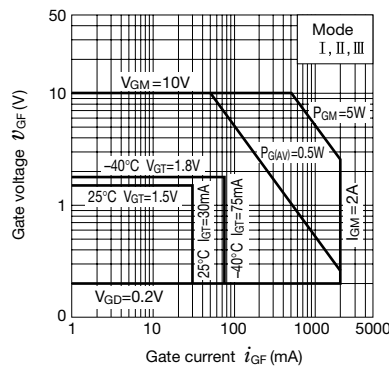
$I_T(RMS) - P_T(AV)$  Characteristics



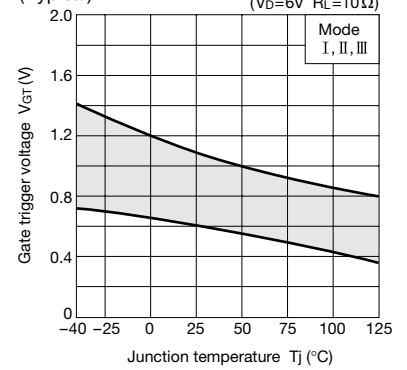
$I_T(RMS) - T_c$  Ratings



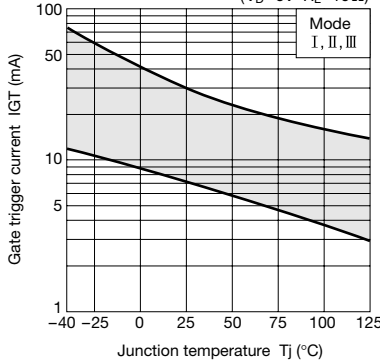
Gate Characteristics



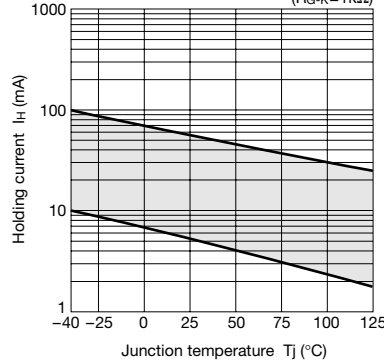
$V_{GT}$  temperature characteristics (Typical)



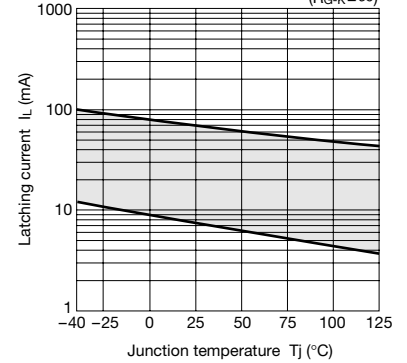
$I_{GT}$  temperature characteristics (Typical)



$I_H$  temperature characteristics (Typical)



$I_L$  temperature characteristics (Typical)



$r_{th(j-c)} - t$  Characteristics

