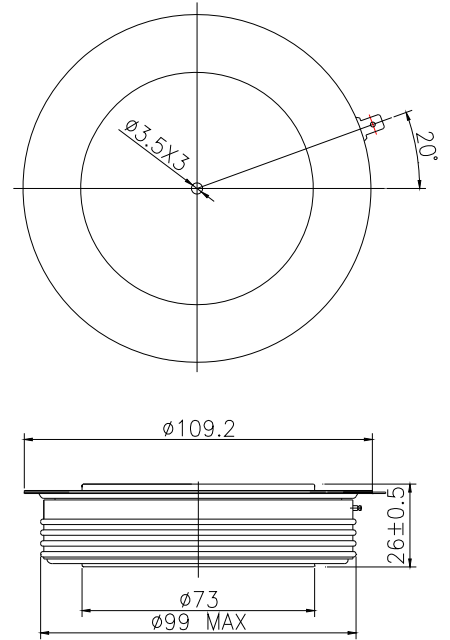




## SCT2940F

### Fast Switching Thyristor



#### Features

- Interdigitated amplifying gates
- Fast turn-on and high di/dt
- Low switching losses

#### Typical Applications

- Inductive heating
- Electronic welders
- Self-commutated inverters

$I_{T(AV)}$	<b>2940A</b>
$V_{DRM}/V_{RRM}$	<b>800~1800V</b>
$t_q$	<b>30~60<math>\mu</math>s</b>
$I_{TSM}$	<b>35.6 kA</b>
$I^2t$	<b>6337 <math>10^3 A^2S</math></b>

SYMBOL	CHARACTERISTIC	TEST CONDITIONS	$T_j(^{\circ}C)$	VALUE			UNIT
				Min	Type	Max	
$I_{T(AV)}$	Mean on-state current	180° half sine wave 50Hz Double side cooled,	125			2940	A
		$T_C=55^{\circ}C$ $T_C=85^{\circ}C$				1970	
$V_{DRM}$ $V_{RRM}$	Repetitive peak off-state voltage Repetitive peak reverse voltage	$V_{DRM} \& V_{RRM}$ , $t_p=10ms$ $V_{DSM} \& V_{RSM} = V_{DRM} \& V_{RRM} + 100V$	125	800		1800	V
$I_{DRM}$ $I_{RRM}$	Repetitive peak current	$V_D = V_{DRM}$ $V_R = V_{RRM}$	125			200	mA
$I_{TSM}$	Surge on-state current	10ms half sine wave	125			35.6	kA
$I^2t$	$I^2T$ for fusing coordination	$V_R = 0.6V_{RRM}$				6337	
$V_{TO}$	Threshold voltage		125			1.30	V
$r_T$	On-state slop resistance					0.15	
$V_{TM}$	Peak on-state voltage	$I_{TM}=4000A$ , $F=40kN$	125			1.90	V
dv/dt	Critical rate of rise of off-state voltage	$V_{DM}=0.67V_{DRM}$	125			500	V/ $\mu$ s
di/dt	Critical rate of rise of on-state current	$V_{DM}=67\%V_{DRM}$ to 3000A Gate pulse $t_r \leq 0.5\mu s$ $I_{GM}=1.5A$	125			1200	A/ $\mu$ s
$Q_{rr}$	Recovery charge	$I_{TM}=2000A$ , $t_p=2000\mu s$ , $di/dt=-60A/\mu s$ , $V_R=50V$	125		1000		$\mu C$
$t_q$	Circuit commutated turn-off time	$I_{TM}=2000A$ , $t_p=1000\mu s$ , $V_R=50V$ $dv/dt=30V/\mu s$ , $di/dt=-20A/\mu s$	125	30		60	$\mu s$
$I_{GT}$	Gate trigger current	$V_A=12V$ , $I_A=1A$	25	40		450	mA
$V_{GT}$	Gate trigger voltage			0.9		4.5	V
$I_H$	Holding current			20		1000	mA
$V_{GD}$	Non-trigger gate voltage	$V_{DM}=67\%V_{DRM}$	125	0.3			V
$R_{th(j-c)}$	Thermal resistance Junction to case	At 180° sine double side cooled Clamping force 40kN				0.010	$^{\circ}C/W$
$R_{th(c-h)}$	Thermal resistance case to heat sink					0.003	
$F_m$	Mounting force			35		47	kN
$T_{stg}$	Stored temperature			-40		140	$^{\circ}C$
$W_t$	Weight					1100	g

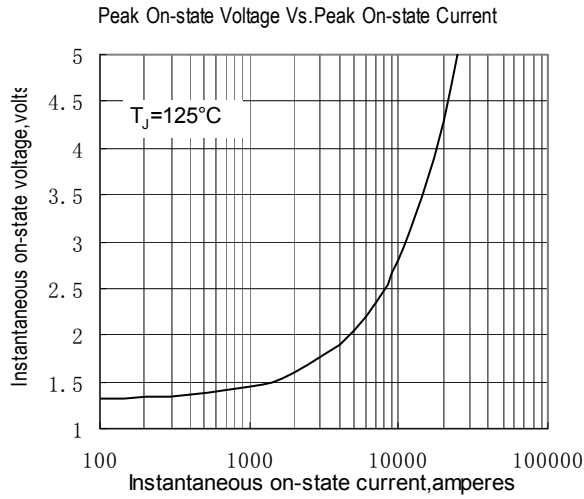


Fig.1

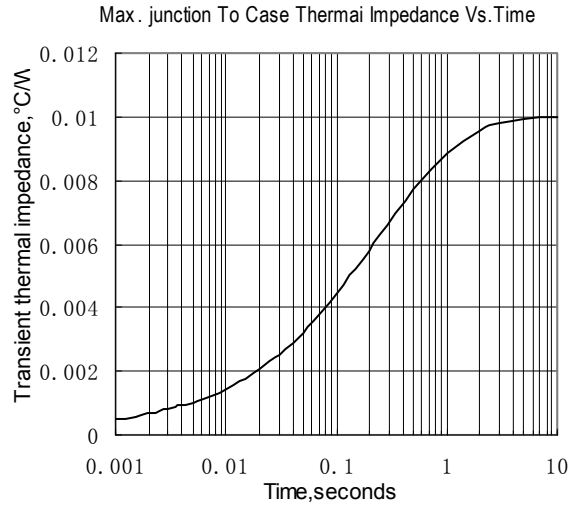


Fig.2

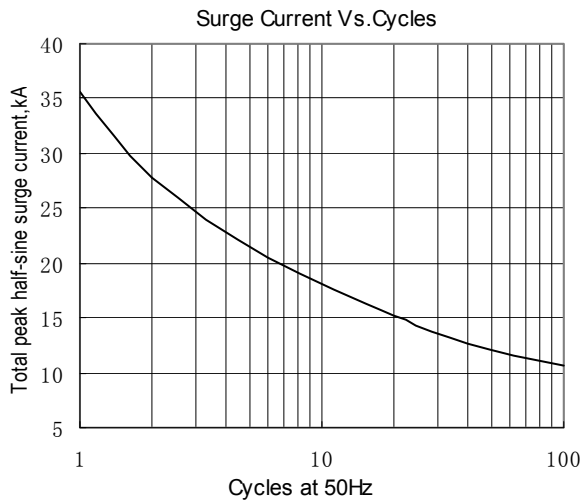


Fig.3

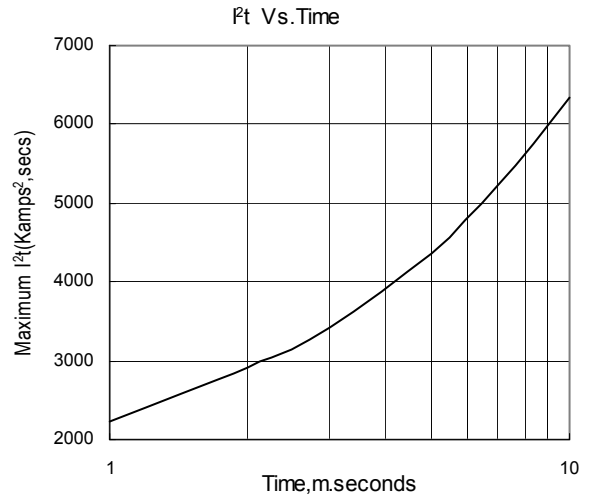


Fig.4

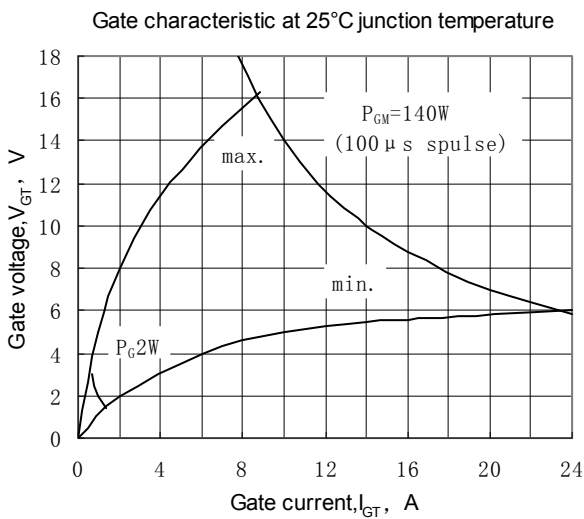


Fig.5

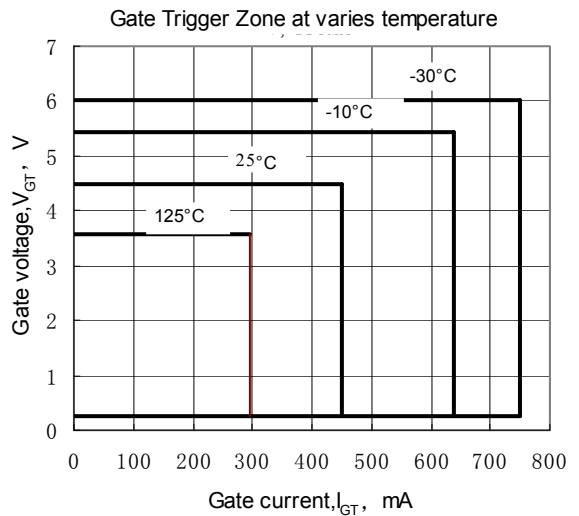


Fig.6

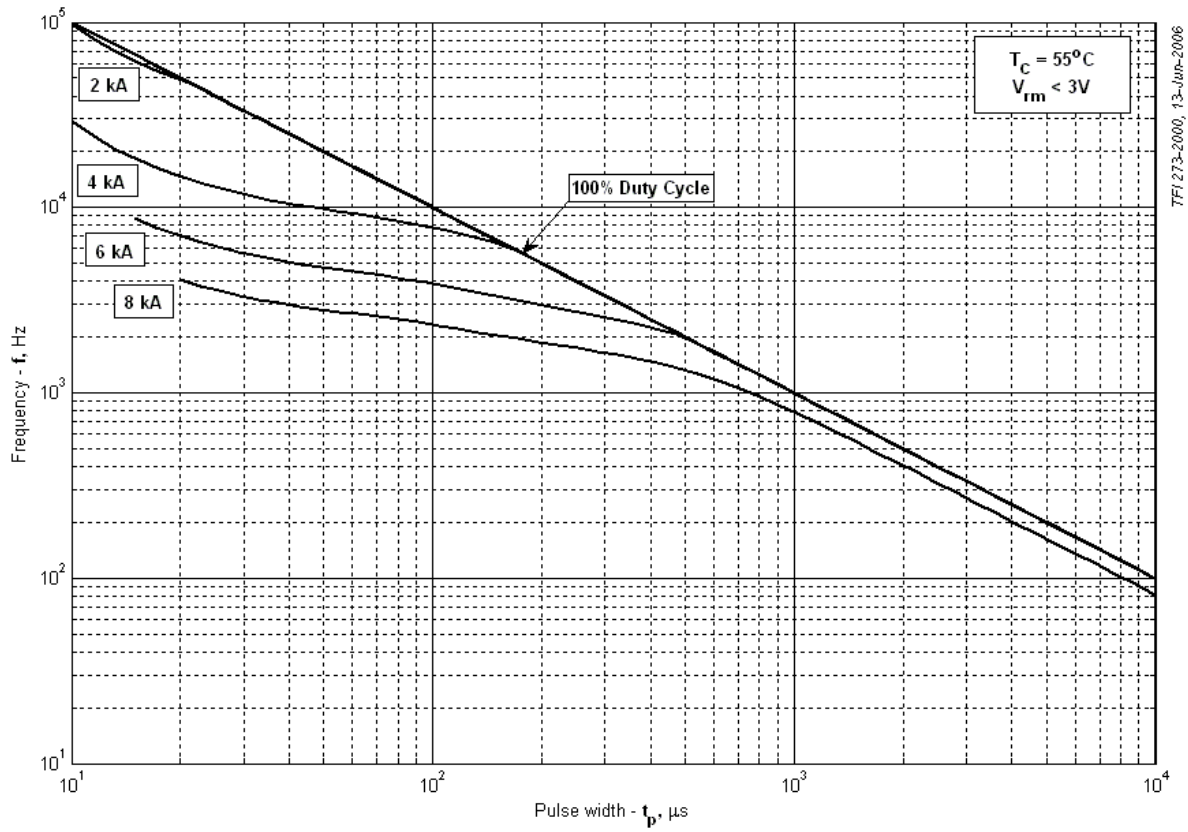


Fig 7 – Sine wave frequency ratings

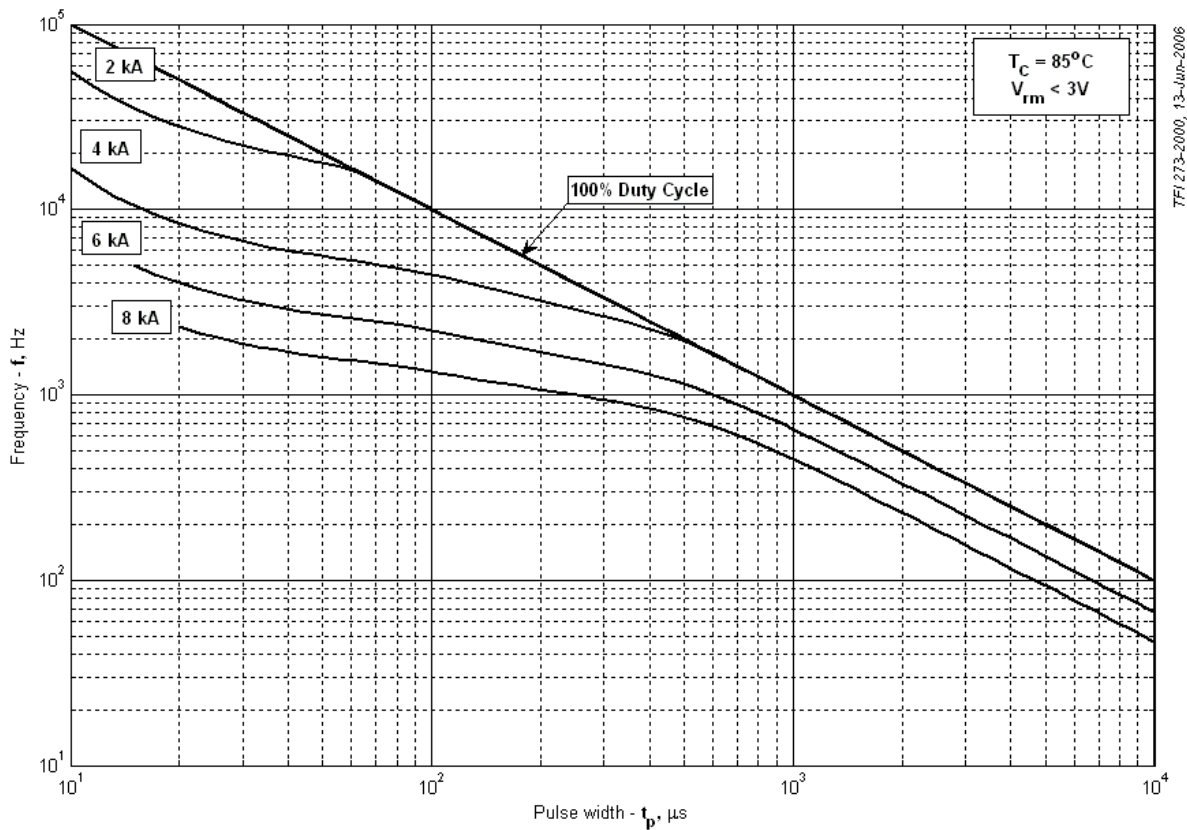


Fig 8 – Sine wave frequency ratings

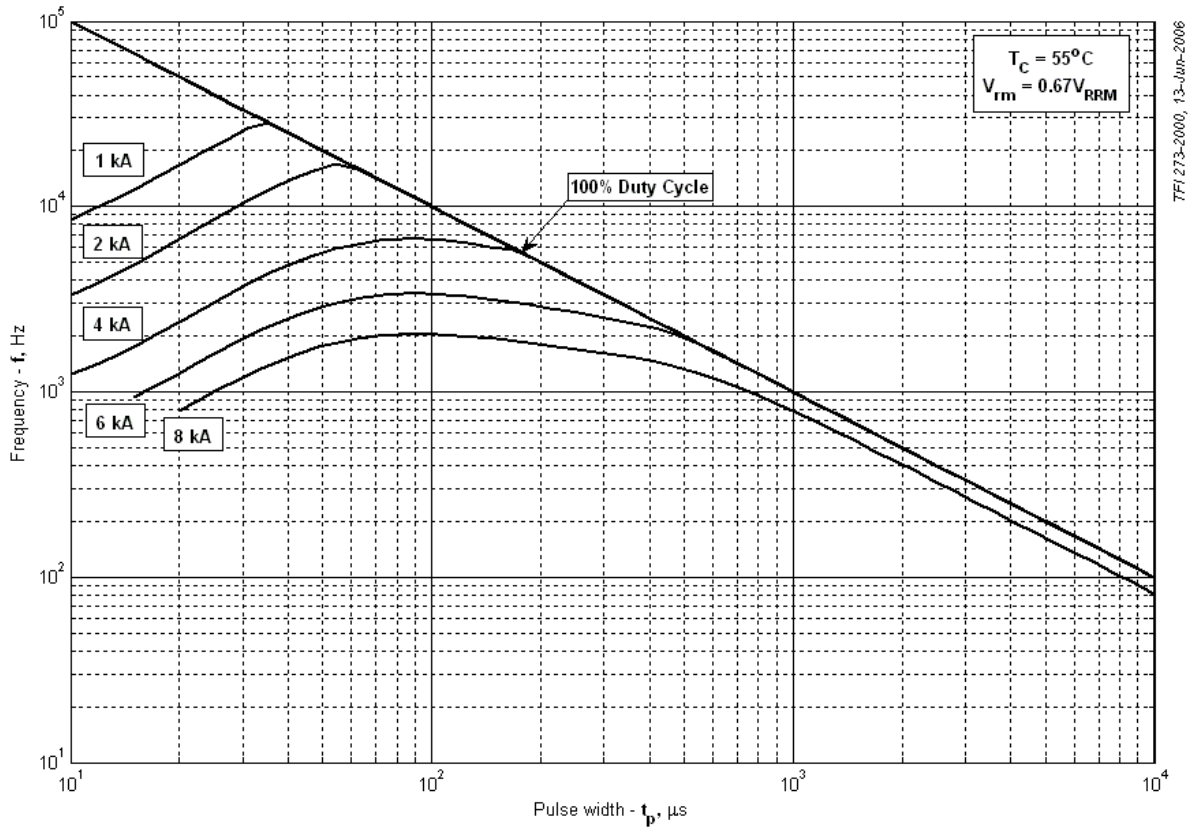


Fig 9 – Sine wave frequency ratings

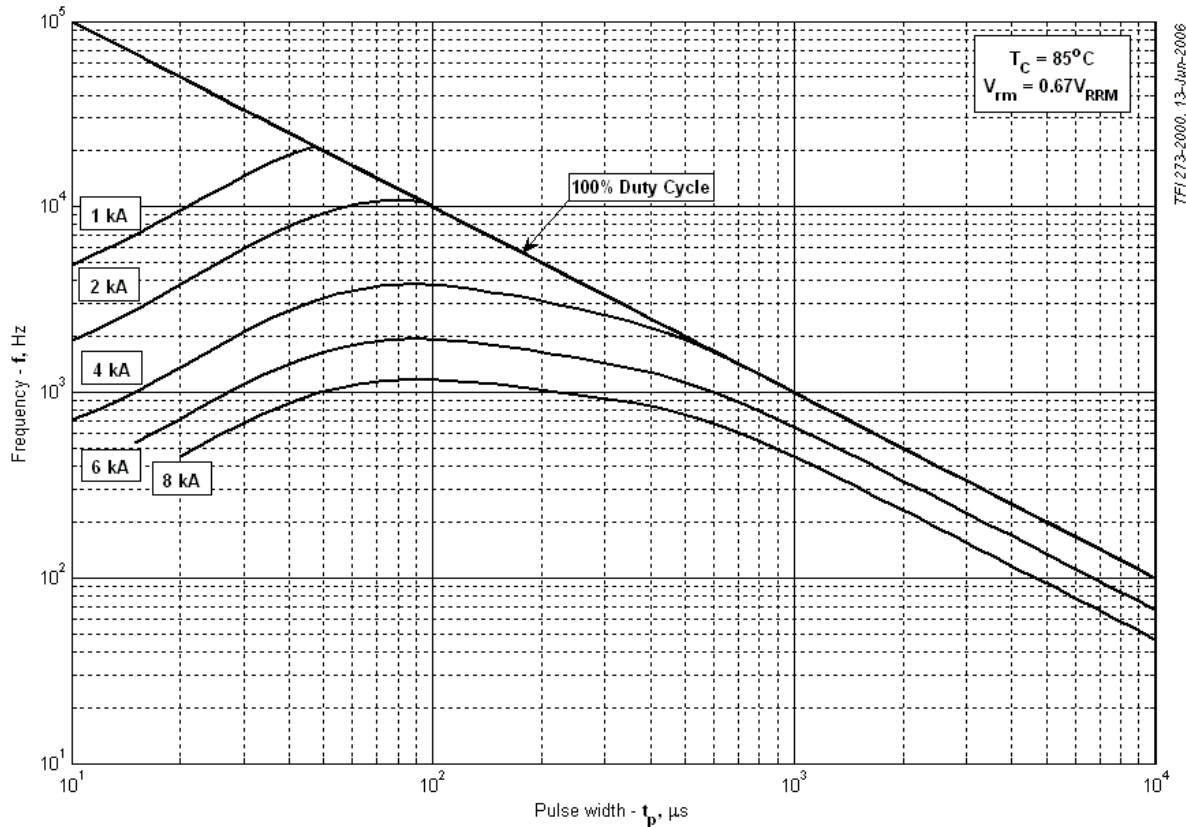


Fig 10 – Sine wave frequency ratings

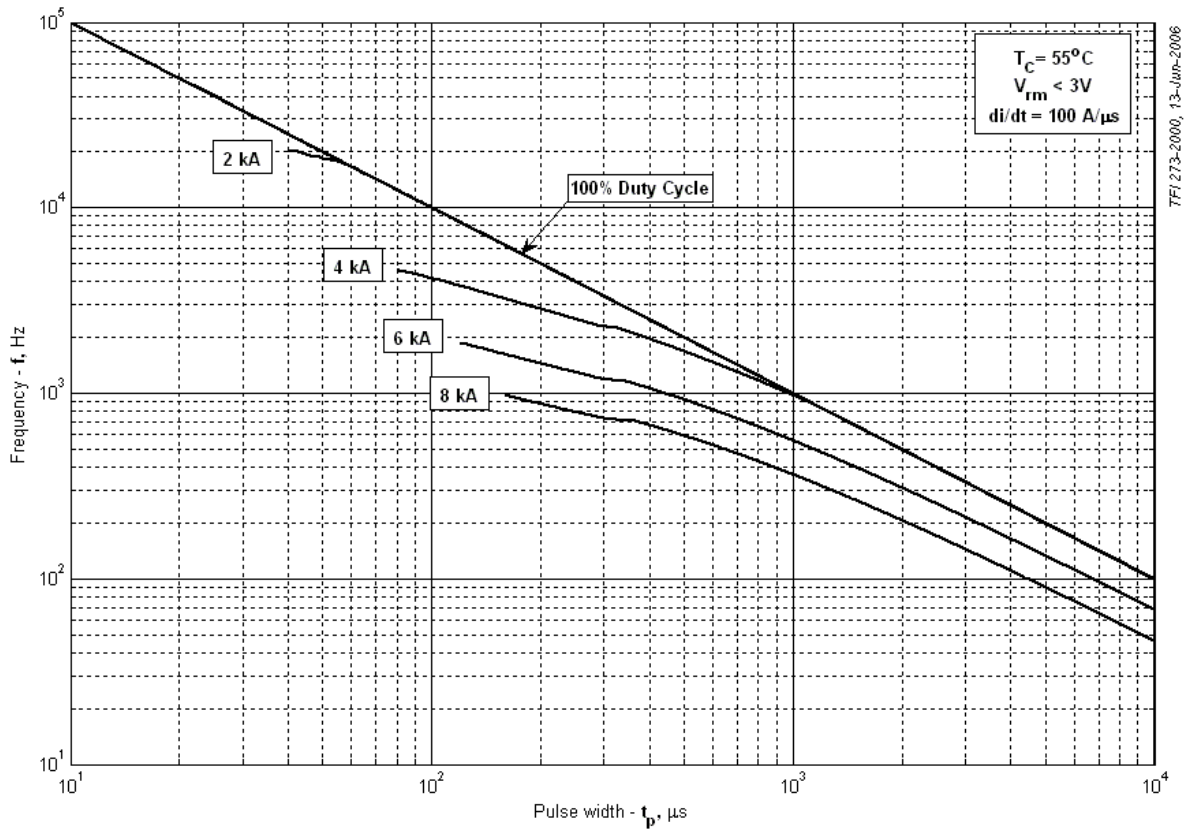


Fig 11 – Square wave frequency ratings

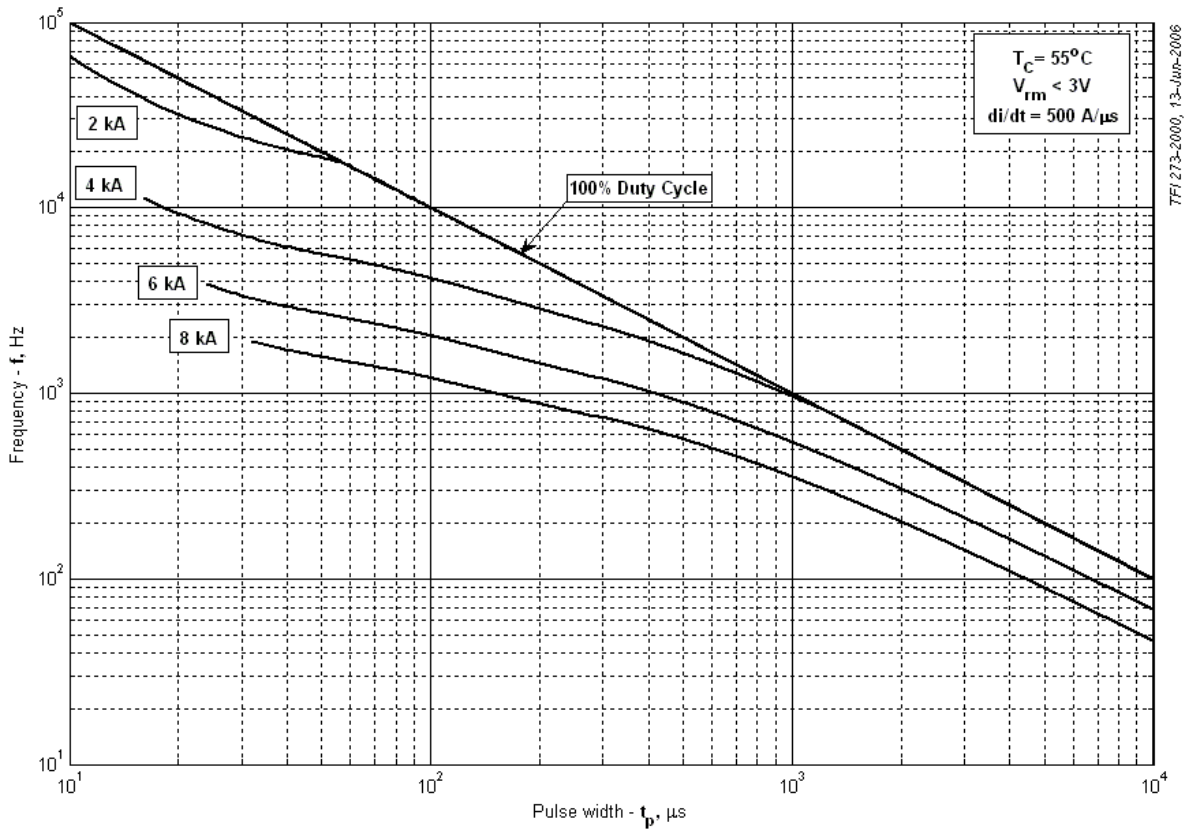


Fig 12 – Square wave frequency ratings

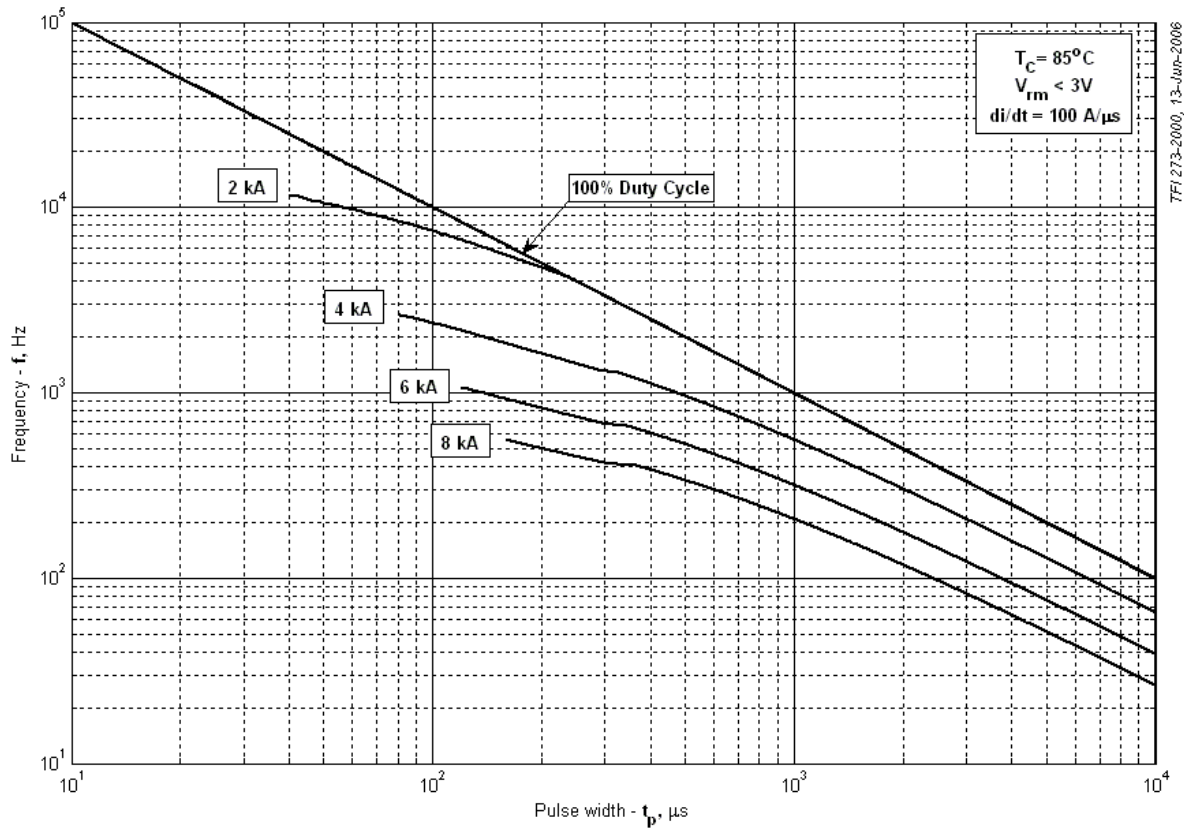


Fig 13 – Square wave frequency ratings

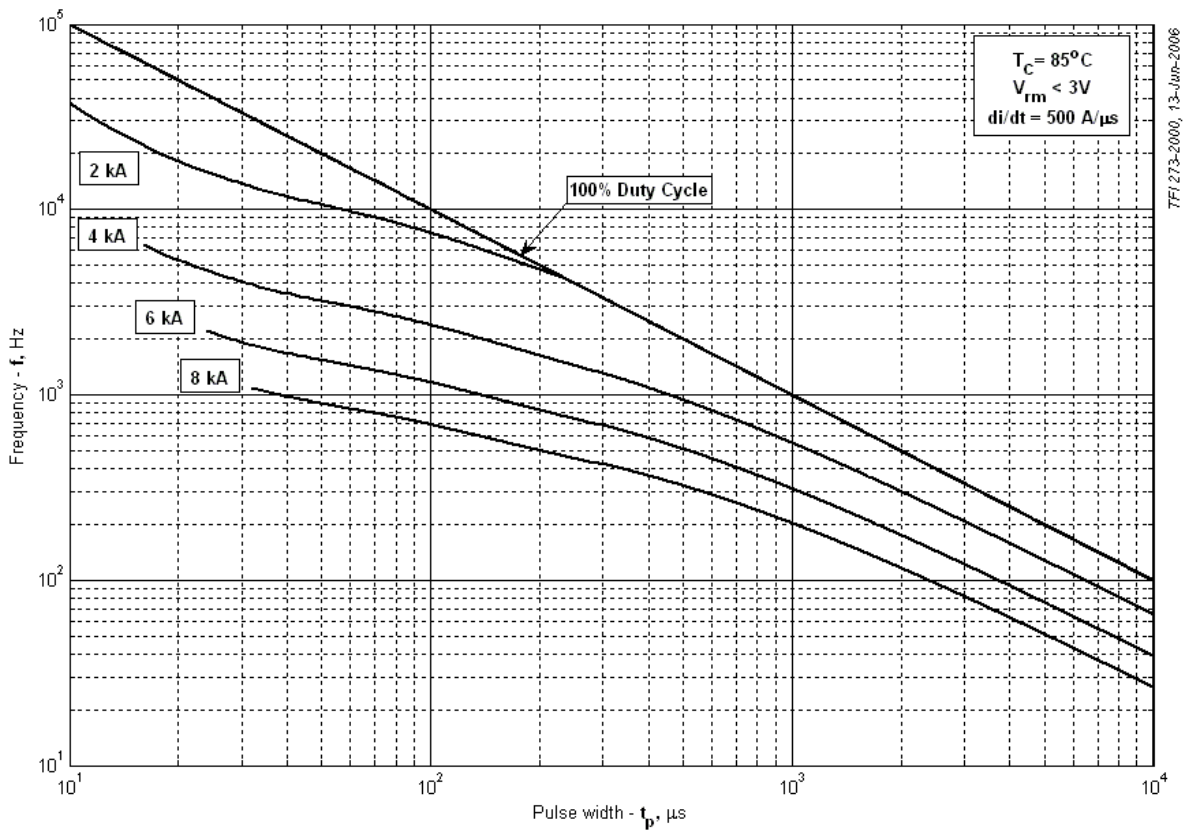


Fig 14 – Square wave frequency ratings