

**Features**

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

**Typical Applications**

- Inductive heating
- Self-commutated inverters

品名：FH3800TN

$I_{T(AV)}$	<b>3800A</b>
$V_{DRM}$	<b>2000~3000V</b>
$V_{RRM}$	<b>1000~2500V</b>
$t_q$	<b>30-100 <math>\mu</math>s</b>



SYMBOL	CHARACTERISTIC	TEST CONDITIONS		$T_i(^{\circ}\text{C})$	VALUE			UNIT
					Min	Type	Max	
$I_{T(AV)}$	Mean on-state current	180° half sine wave 50Hz Double side cooled,	$T_C=55^{\circ}\text{C}$	125			3800	A
$V_{DRM}$	Repetitive peak off-state voltage	$t_p=10\text{ms}$		125	2000		3000	V
$V_{RRM}$	Repetitive peak reverse voltage			125	1000		2500	V
$I_{DRM}$ $I_{RRM}$	Repetitive peak current	at $V_{DRM}$ at $V_{RRM}$		125			250	mA
$I_{TSM}$	Surge on-state current	10ms half sine wave		125			46	kA
$I^2t$	$I^2t$ for fusing coordination	$V_R=0.6V_{RRM}$					10580	$\text{A}^2\text{s}\cdot 10^3$
$V_{TO}$	Threshold voltage			125			1.32	V
$r_T$	On-state slope resistance						0.14	m $\Omega$
$V_{TM}$	Peak on-state voltage	$I_{TM}=5000\text{A}$ , $F=70\text{kHz}$	$30\mu\text{s}\leq t_q\leq 45\mu\text{s}$	25			2.60	V
			$46\mu\text{s}\leq t_q\leq 70\mu\text{s}$				2.00	V
			$71\mu\text{s}\leq t_q\leq 100\mu\text{s}$				1.80	V
dv/dt	Critical rate of rise of off-state voltage	$V_{DM}=0.67V_{DRM}$		125			1000	V/ $\mu$ s
di/dt	Critical rate of rise of on-state current (Non-repetitive)	$V_{DM}=67\%V_{DRM}$ , $t_o4000\text{A}$ Gate pulse $t_r\leq 0.5\mu\text{s}$ $I_{GM}=1.5\text{A}$		125			1200	A/ $\mu$ s
$Q_{rr}$	Recovery charge	$I_{TM}=2000\text{A}$ , $t_p=4000\mu\text{s}$ , $di/dt=-20\text{A}/\mu\text{s}$ , $V_R=100\text{V}$		125		2100		$\mu\text{C}$
$t_q$	Circuit commutated turn-off time	$I_{TM}=2000\text{A}$ , $t_p=4000\mu\text{s}$ , $V_R=100\text{V}$ $dv/dt=30\text{V}/\mu\text{s}$ , $di/dt=-20\text{A}/\mu\text{s}$		125	30		100	$\mu\text{s}$
$I_{GT}$	Gate trigger current	$V_A=12\text{V}$ , $I_A=1\text{A}$		25	40		450	mA
$V_{GT}$	Gate trigger voltage				0.9		4.5	V
$I_H$	Holding current				20		1000	mA
$I_L$	Latching current						1500	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	DC: double side cooled Clamping force 70 kN					0.007	$^{\circ}\text{C}/\text{W}$
$R_{th(c-h)}$	Thermal resistance case to heat sink					0.002		
$F_m$	Mounting force				63		84	kN
$T_{vj}$	Junction temperature				-40		125	$^{\circ}\text{C}$
$T_{stg}$	Stored temperature				-40		140	$^{\circ}\text{C}$
$W_t$	Weight					1390		g
Outline	P20							

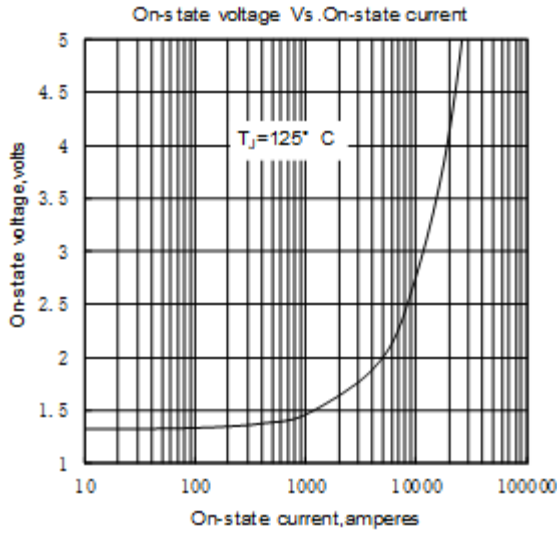


Fig. 1

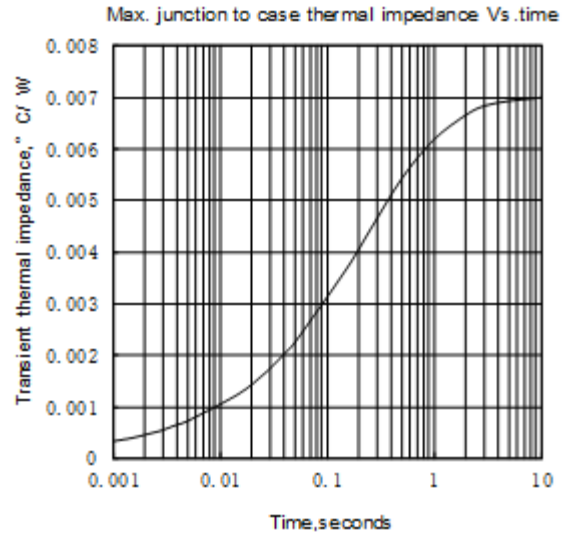


Fig. 2

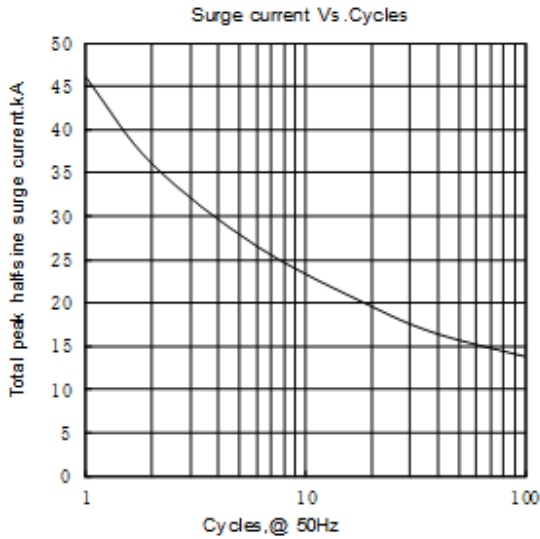


Fig. 3

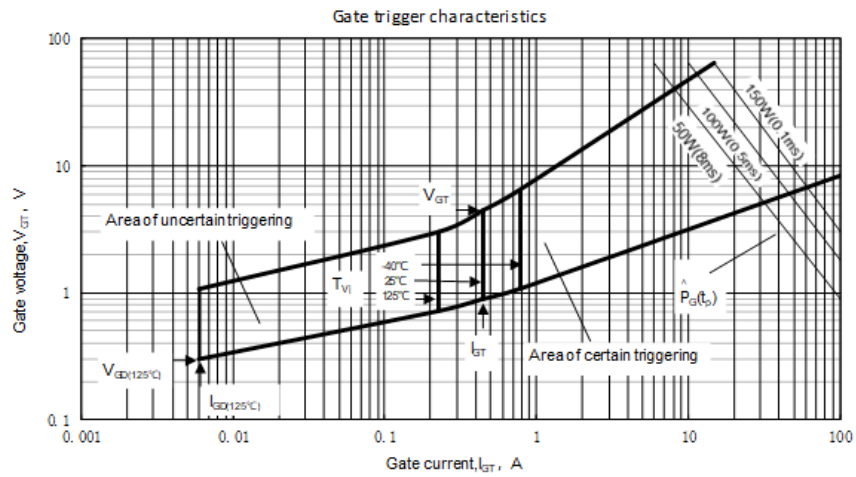
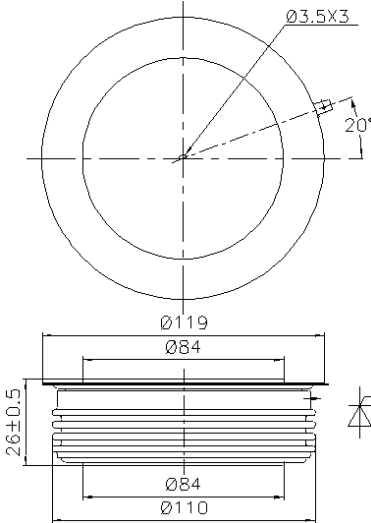


Fig. 4



Nlps reserves the right to change specifications without notice.