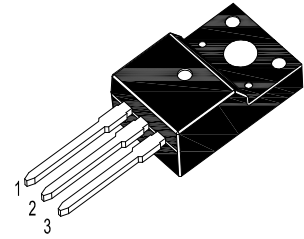
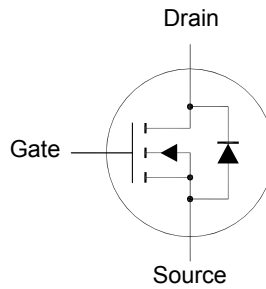


SFTN0480

N-Channel Enhancement Mode Power MOSFET



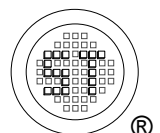
TO-220F Plastic Package
1.Gate 2.Drain 3.Source

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	800	V
Gate-Source Voltage	V_{GS}	± 20	V
Gate-Source Voltage AC($f > 1$ Hz)	V_{GS}	± 30	V
Drain Current $T_C = 25^\circ\text{C}$ $T_C = 100^\circ\text{C}$	I_D	4 2.5	A
Peak Drain Current	I_{DM}	12	A
Power Dissipation $T_C = 25^\circ\text{C}$	P_{tot}	38	W
Operating Junction and Storage Temperature Range	T_J, T_{stg}	- 55 to + 150	$^\circ\text{C}$

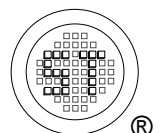
Thermal Characteristics

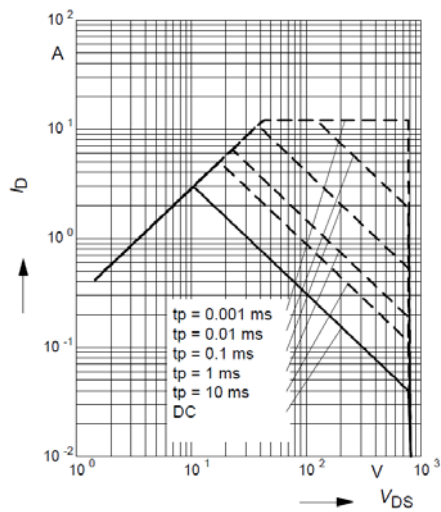
Parameter	Symbol	Max.	Unit
Maximum Thermal Resistance from Junction to Case	$R_{\theta JC}$	2	K/W
Maximum Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	62	K/W



Characteristics at $T_J = 25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage at $I_D = 0.25\text{ mA}$	BV_{DSS}	800	-	-	V
Drain-Source Leakage Current at $V_{DS} = 800\text{ V}$ at $V_{DS} = 800\text{ V}$, $T_J = 150^\circ\text{C}$	I_{DSS}	- -	- -	10 100	μA
Gate Leakage Current at $V_{GS} = 20\text{ V}$	I_{GSS}	-	-	100	nA
Gate-Source Threshold Voltage at $V_{DS} = V_{GS}$, $I_D = 240\text{ }\mu\text{A}$	$V_{GS(th)}$	2.1	-	3.9	V
Drain-Source On-State Resistance at $V_{GS} = 10\text{ V}$, $I_D = 2.5\text{ A}$ at $V_{GS} = 10\text{ V}$, $I_D = 2.5\text{ A}$, $T_J = 150^\circ\text{C}$	$R_{DS(on)}$	- -	- 3	1.3 -	Ω
Forward Transconductance at $V_{DS} \geq 2 \times I_D \times R_{DS(on)max}$, $I_D = 2.5\text{ A}$	g_{FS}	-	3	-	S
Diode Forward Voltage at $I_S = I_F$, $V_{GS} = 0\text{ V}$	V_{SD}	-	-	1.2	V
Maximun Body-Diode Continuous Current	I_S	-	-	4	A
Input Capacitance at $V_{GS} = 0\text{ V}$, $V_{DS} = 25\text{ V}$, $f = 1\text{ MHz}$	C_{iss}	-	570	-	pF
Output Capacitance at $V_{GS} = 0\text{ V}$, $V_{DS} = 25\text{ V}$, $f = 1\text{ MHz}$	C_{oss}	-	240	-	pF
Reverse Transfer Capacitance at $V_{GS} = 0\text{ V}$, $V_{DS} = 25\text{ V}$, $f = 1\text{ MHz}$	C_{rss}	-	12	-	pF
Turn-On Delay Time at $I_D = 4\text{ A}$, $V_{DD} = 400\text{ V}$, $V_{GS} = 0/10\text{ V}$, $R_G = 22\text{ }\Omega$	$t_{d(on)}$	-	25	-	ns
Turn-On Rise Time at $I_D = 4\text{ A}$, $V_{DD} = 400\text{ V}$, $V_{GS} = 0/10\text{ V}$, $R_G = 22\text{ }\Omega$	t_r	-	15	-	ns
Turn-Off Delay Time at $I_D = 4\text{ A}$, $V_{DD} = 400\text{ V}$, $V_{GS} = 0/10\text{ V}$, $R_G = 22\text{ }\Omega$	$t_{d(off)}$	-	-	75	ns
Turn-Off Fall Time at $I_D = 4\text{ A}$, $V_{DD} = 400\text{ V}$, $V_{GS} = 0/10\text{ V}$, $R_G = 22\text{ }\Omega$	t_f	-	-	16	ns

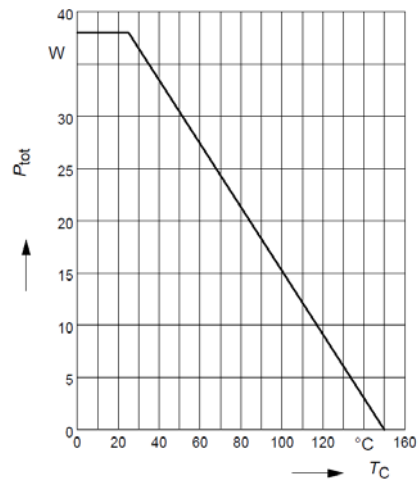




Safe operating area FullPAK

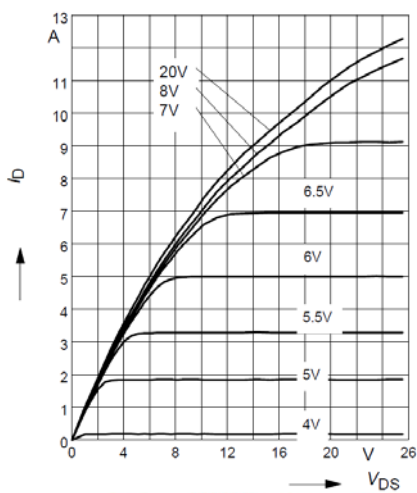
$$I_D = f(V_{DS})$$

parameter: $D = 0$, $T_C = 25^\circ\text{C}$



Power dissipation

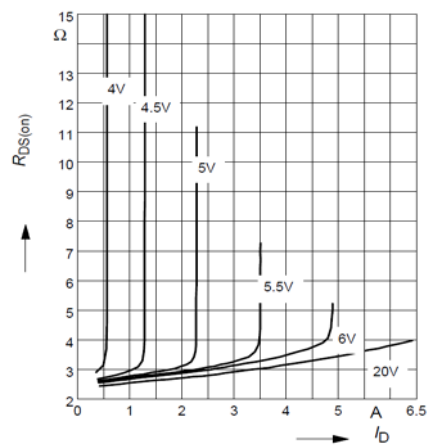
$$P_{\text{tot}} = f(T_C)$$



Typ. output characteristic

$$I_D = f(V_{DS}); T_J = 25^\circ\text{C}$$

parameter: $t_p = 10 \mu\text{s}$, V_{GS}



Typ. drain-source on resistance

$$R_{DS(\text{on})} = f(I_D)$$

parameter: $T_J = 150^\circ\text{C}$, V_{GS}

