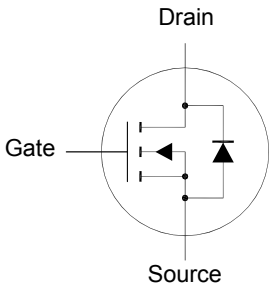
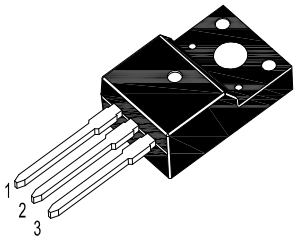
SFTN7650

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}	700	V
Gate-Source Voltage		V_{GS}	± 20	V
Gate-Source Voltage AC(f > 1 Hz)		V_{GS}	± 30	V
Drain Current	T_C = 25℃ T_C = 100℃	I_D	7.3 4.6	A
Peak Drain Current	T_C = 25℃	I_{DM}	18	A
Power Dissipation	T_C = 25℃	P_{tot}	28	W
Operating Junction and Storage Temperature Range		T_J, T_{stg}	- 55 to + 150	℃

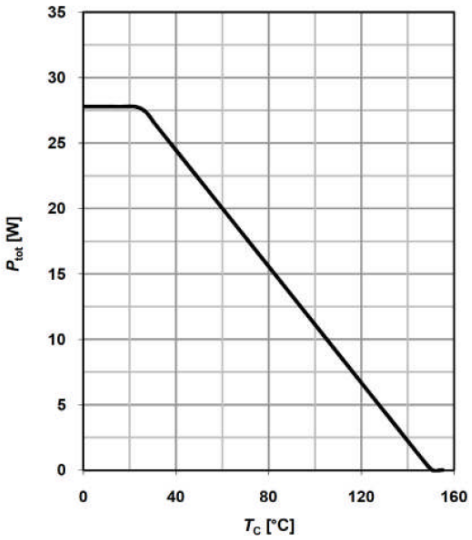
Thermal Characteristics

Parameter	Symbol	Max.	Unit
Thermal Resistance from Juntion to Case	$R_{\theta JC}$	4.5	℃/W
Thermal Resistance from Juntion to Ambient	$R_{\theta JA}$	80	℃/W

Characteristics at T_J = 25℃ unless otherwise specified

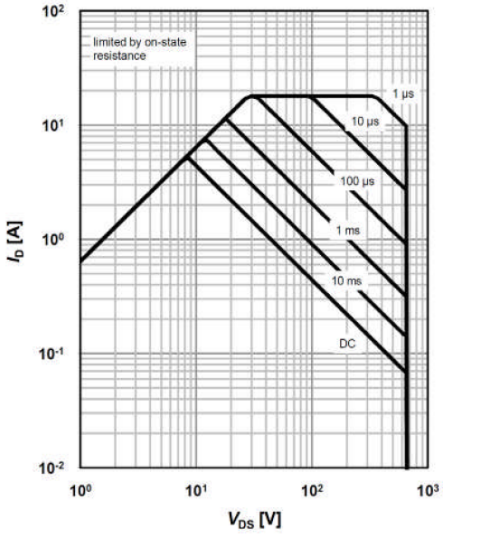
Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage at I_D = 1 mA	BV_{DSS}	700	-	-	V
Drain-Source Leakage Current at V_{DS} = 700 V	I_{DSS}	-	-	1	μA
Gate Leakage Current at V_{GS} = ±20 V	I_{GSS}	-	-	±100	nA
Gate-Source Threshold Voltage at V_{DS} = V_{GS}, I_D = 0.21 mA	$V_{GS(th)}$	2.5	-	3.5	V
Drain-Source On-State Resistance at V_{GS} = 10 V, I_D = 2.1 A	$R_{DS(on)}$	-	-	0.6	Ω
Diode Forward Voltage at I_F = 3.2 A, V_{GS}= 0 V	V_{SD}	-	0.9	-	V
Input Capacitance at V_{GS} = 0 V, V_{DS} = 100 V, f = 1 MHz	C_{iss}	-	440	-	pF
Output Capacitance at V_{GS} = 0 V, V_{DS} = 100 V, f = 1 MHz	C_{oss}	-	30	-	pF
Turn-On Delay Time at I_D = 3.2 A, V_{DD} = 400 V, V_{GS} = 13 V, R_G = 6.8 Ω	$t_{d(on)}$	-	10	-	ns
Turn-On Rise Time at I_D = 3.2 A, V_{DD} = 400 V, V_{GS} = 13 V, R_G = 6.8 Ω	t_r	-	8	-	ns
Turn-Off Delay Time at I_D = 3.2 A, V_{DD} = 400 V, V_{GS} = 13 V, R_G = 6.8 Ω	$t_{d(off)}$	-	64	-	ns
Turn-Off Fall Time at I_D = 3.2 A, V_{DD} = 400 V, V_{GS} = 13 V, R_G = 6.8 Ω	t_f	-	11	-	ns

Power dissipation



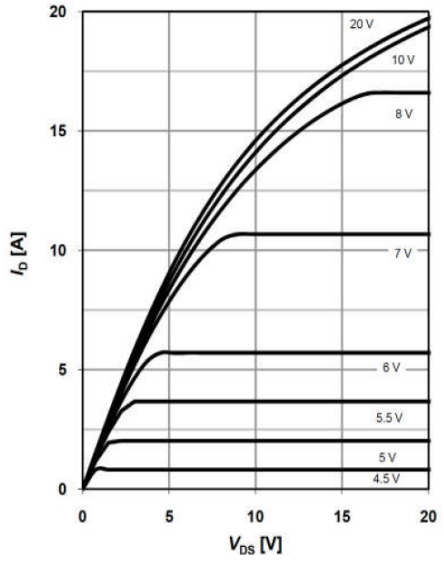
$P_{tot} = f(T_C)$

Safe operating area T_C=25 °C



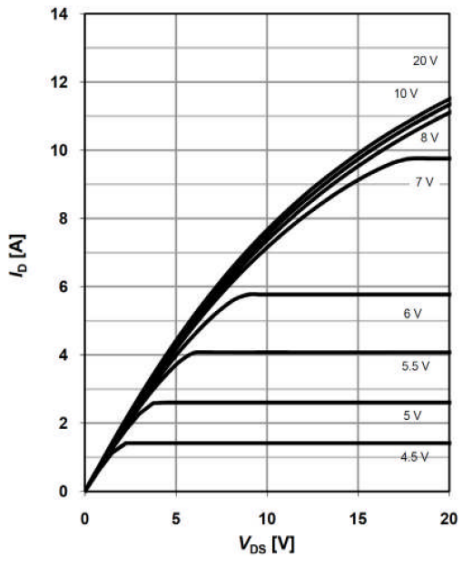
$I_D=f(V_{DS})$; T_C=25 °C; V_{GS} > 7V; D=0; parameter t_p

Typ. output characteristics T_C=25 °C



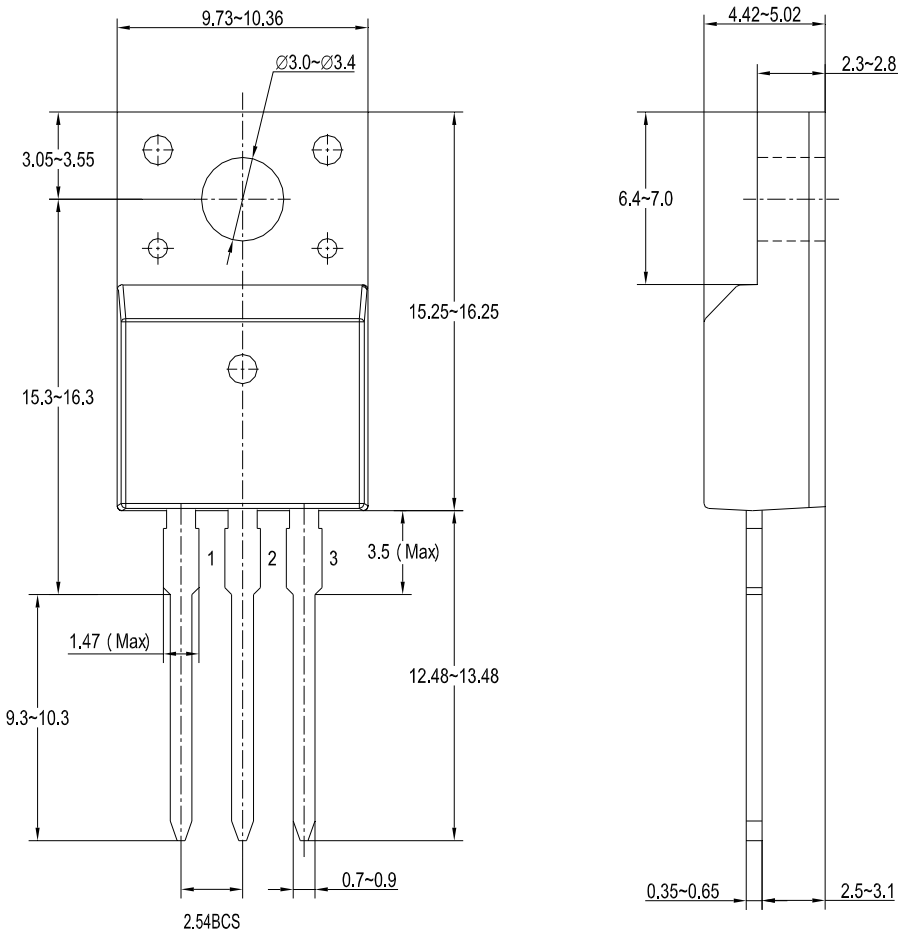
$I_D=f(V_{DS})$; T_j=25 °C; parameter: V_{GS}

Typ. output characteristics T_j=125 °C



$I_D=f(V_{DS})$; T_j=125 °C; parameter: V_{GS}

TO-220F Package Outline



Dimensions in millimeters