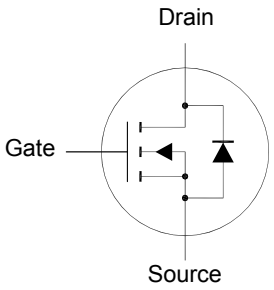
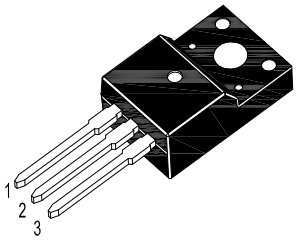
SFTN1180

N-Channel Enhancement Mode Power MOSFET





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

Absolute Maximum Ratings

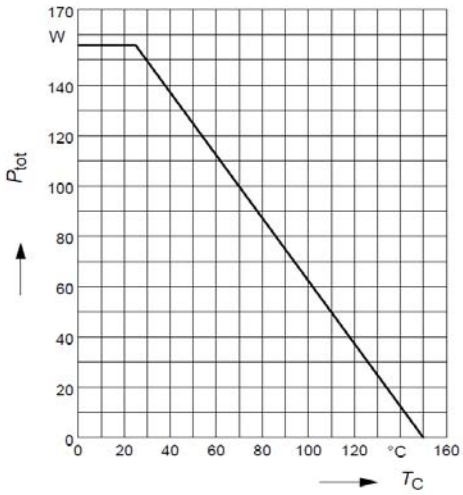
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	800	V
Gate-Source Voltage	V_{GS}	± 20	V
Gate-Source Voltage AC(f > 1 Hz)	V_{GS}	± 30	V
Drain Current T_C = 25℃ T_C = 100℃	I_D	11 7.1	A
Peak Drain Current	I_{DM}	33	A
Power Dissipation T_C = 25℃	P_{tot}	41	W
Operating Junction and Storage Temperature Range	T_J, T_{stg}	- 55 to + 150	℃

Thermal Characteristics

Parameter	Symbol	Max.	Unit
Maximum Thermal Resistance from Juntion to Case	$R_{\theta JC}$	0.8	K/W
Maximum Thermal Resistance from Juntion to Ambient	$R_{\theta JA}$	62	K/W

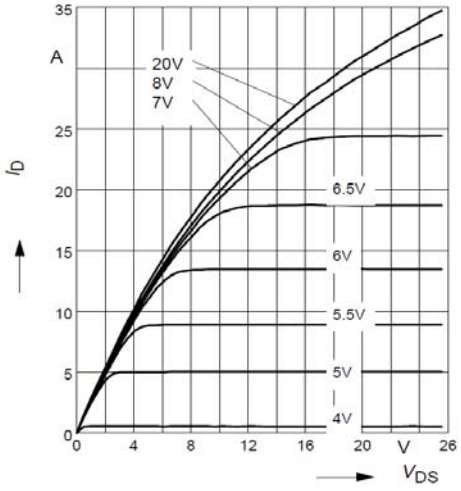
Characteristics at T_J = 25℃ unless otherwise specified

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage at I_D = 0.25 mA	BV_{DSS}	800	-	-	V
Drain-Source Leakage Current at V_{DS} = 800 V at V_{DS} = 800 V, T_J = 150℃	I_{DSS}	- -	- -	20 200	μA
Gate Leakage Current at V_{GS} = 20 V	I_{GSS}	-	-	100	nA
Gate-Source Threshold Voltage at V_{DS} = V_{GS}, I_D = 680 μA	$V_{GS(th)}$	2.1	-	3.9	V
Drain-Source On-State Resistance at V_{GS} = 10 V, I_D = 7.1 A at V_{GS} = 10 V, I_D = 7.1 A, T_J = 150℃	$R_{DS(on)}$	- -	- 1.1	0.45 -	Ω
Forward Transconductance at $V_{DS} \geq 2 \times I_D \times R_{DS(on)max}$, I_D = 7.1 A	g_{FS}	-	7.5	-	S
Diode Forward Voltage at I_S = I_F, V_{GS}= 0 V	V_{SD}	-	-	1.2	V
Maximun Body-Diode Continuous Current	I_S	-	-	11	A
Input Capacitance at V_{GS} = 0 V, V_{DS} = 25 V, f = 1 MHz	C_{iss}	-	1600	-	pF
Output Capacitance at V_{GS} = 0 V, V_{DS} = 25 V, f = 1 MHz	C_{oss}	-	800	-	pF
Reverse Transfer Capacitance at V_{GS} = 0 V, V_{DS} = 25 V, f = 1 MHz	C_{rss}	-	40	-	pF
Turn-On Delay Time at I_D = 11 A, V_{DD} = 400 V, V_{GS} = 0/10 V, R_G= 7.5 Ω	$t_{d(on)}$	-	25	-	ns
Turn-On Rise Time at I_D = 11 A, V_{DD} = 400 V, V_{GS} = 0/10 V, R_G= 7.5 Ω	t_r	-	15	-	ns
Turn-Off Delay Time at I_D = 11 A, V_{DD} = 400 V, V_{GS} = 0/10 V, R_G= 7.5 Ω	$t_{d(off)}$	-	-	82	ns
Turn-Off Fall Time at I_D = 11 A, V_{DD} = 400 V, V_{GS} = 0/10 V, R_G= 7.5 Ω	t_f	-	-	10	ns



Power dissipation

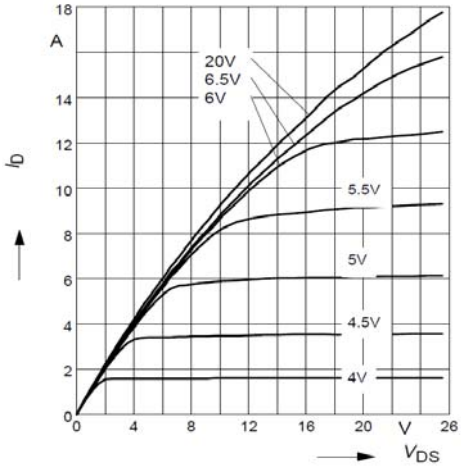
$P_{tot} = f(T_C)$



Typ. output characteristic

$I_D = f(V_{DS})$; T_j=25°C

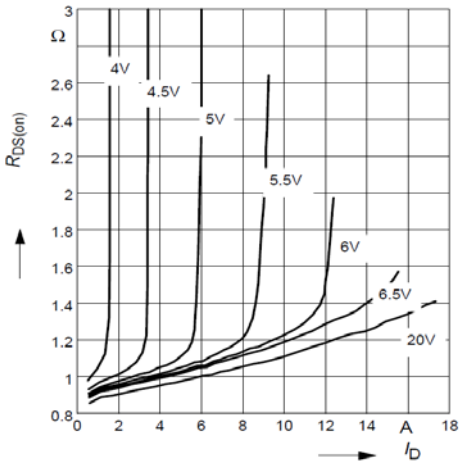
parameter: t_p = 10 µs, V_{GS}



Typ. output characteristic

$I_D = f(V_{DS})$; T_j=150°C

parameter: t_p = 10 µs, V_{GS}



Typ. drain-source on resistance

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

parameter: T_j=150°C, V_{GS}

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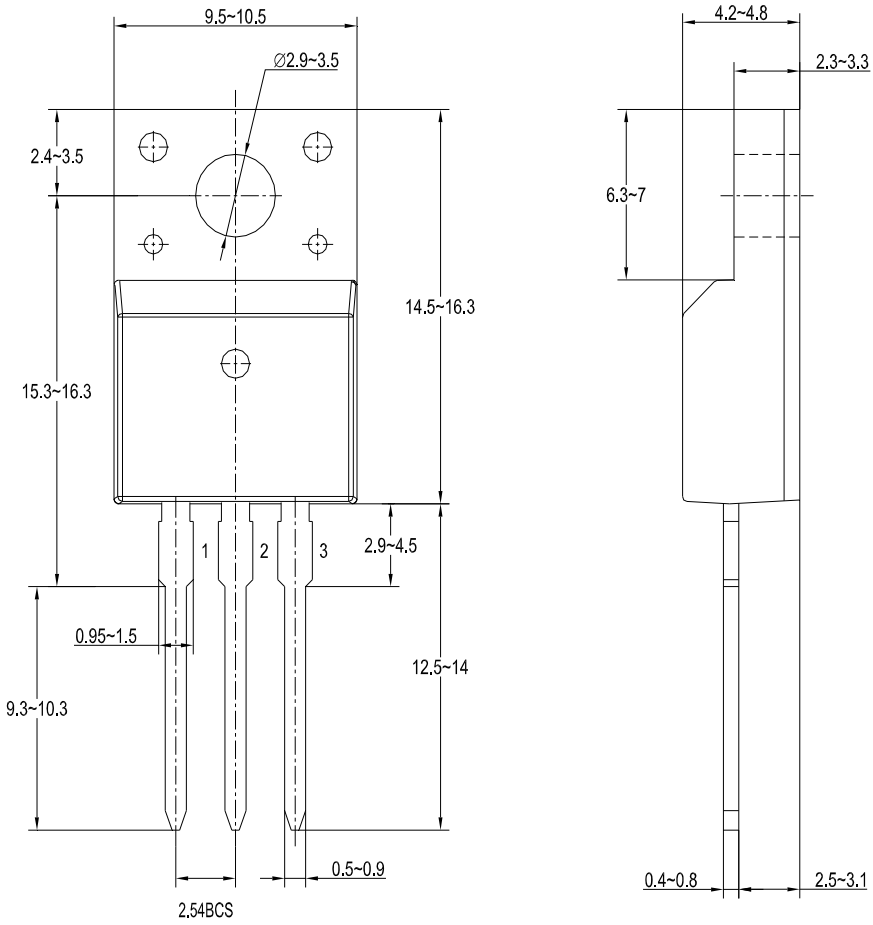
Dated: 11/03/2016 Rev: 01

TO-220F Package Outline



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