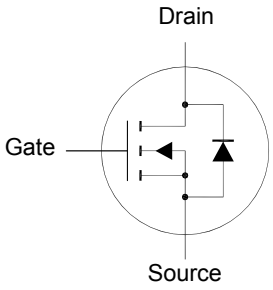
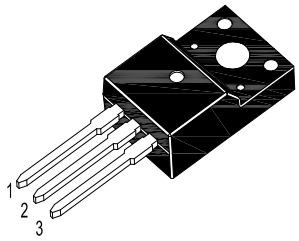
SFTN0865

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}	650	V
Gate-Source Voltage	V_{GS}	± 30	V
Drain Current [1] T_C = 25℃ T_C = 100˚C	I_D	8 5	A
Drain Current - Pulsed [1]	I_{DM}	18	A
Power Dissipation	P_{tot}	40.3	W
Operating Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	- 55 to + 150	℃

[1] Drain current limited by maximum junction temperature.

Thermal Characteristics

Parameter	Symbol	Max.	Unit
Maximum Thermal Resistance from Juntion to Case	$R_{\theta JC}$	3.1	℃/W
Maximum Thermal Resistance from Juntion to Ambient	$R_{\theta JA}$	62.5	℃/W

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Characteristics at T_C = 25℃ unless otherwise specified

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage at I_D = 250 μA	BV_{DSS}	650	-	-	V
Drain-Source Leakage Current at V_{DS} = 650 V	I_{DSS}	-	-	10	μA
Gate Leakage Current at V_{GS} = ± 30 V	I_{GSS}	-	-	± 100	nA
Gate-Source Threshold Voltage at V_{DS} = V_{GS}, I_D = 250 μA	$V_{GS(th)}$	2	-	4	V
Drain-Source On-State Resistance at V_{GS} = 10 V, I_D = 4 A	$R_{DS(on)}$	-	-	0.58	Ω
Input Capacitance at V_{GS} = 0 V, V_{DS} = 40 V, f = 1 MHz	C_{iss}	-	500	-	pF
Output Capacitance at V_{GS} = 0 V, V_{DS} = 40 V, f = 1 MHz	C_{oss}	-	50	-	pF
Reverse Transfer Capacitance at V_{GS} = 0 V, V_{DS} = 40 V, f = 1 MHz	C_{rss}	-	5	-	pF
Turn-On Delay Time at I_D = 8 A, V_{DD} = 325 V, R_G = 25 Ω	$t_{d(on)}$	-	17	-	ns
Turn-On Rise Time at I_D = 8 A, V_{DD} = 325 V, R_G = 25 Ω	t_r	-	40	-	ns
Turn-Off Delay Time at I_D = 8 A, V_{DD} = 325 V, R_G = 25 Ω	$t_{d(off)}$	-	60	-	ns
Turn-Off Fall Time at I_D = 8 A, V_{DD} = 325 V, R_G = 25 Ω	t_f	-	22	-	ns

Drain-Source Diode Characteristics and Maximum Ratings (T_c = 25℃)

Parameter	Symbol	Max.	Unit
Drain-Source Diode Forward Voltage at V_{GS} = 0 V, I_S = 8 A	V_{SD}	1.4	V
Source (Diode Forward) Current	I_S	8	A
Source Current - Pulse	I_{SP}	32	A

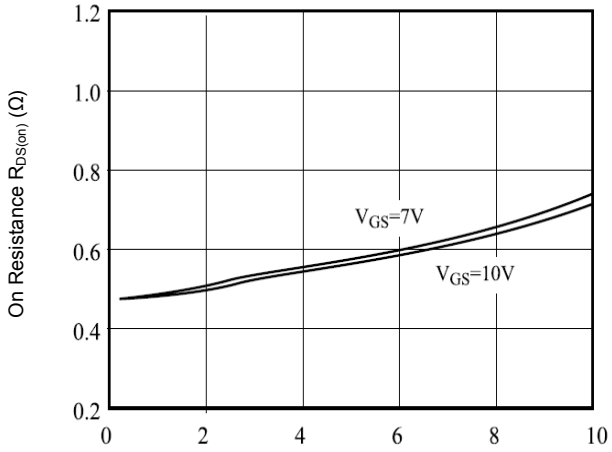


Figure 1. $R_{DS(on)}$ - I_D

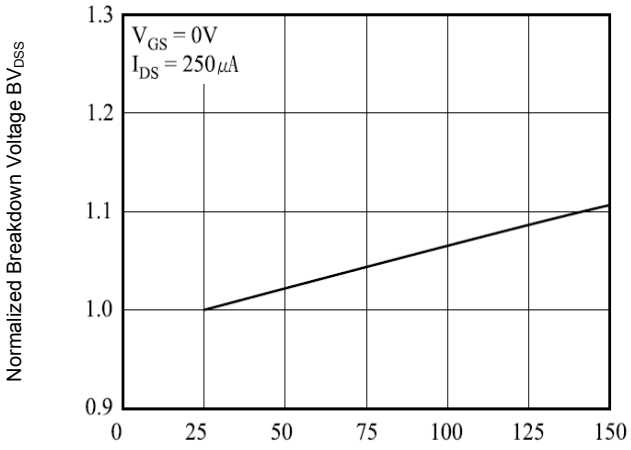


Figure 2. BV_{DSS} - T_j

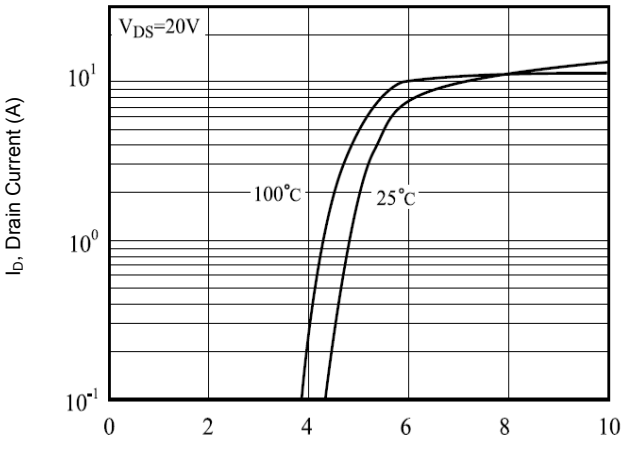


Figure 3. I_D - V_{GS}

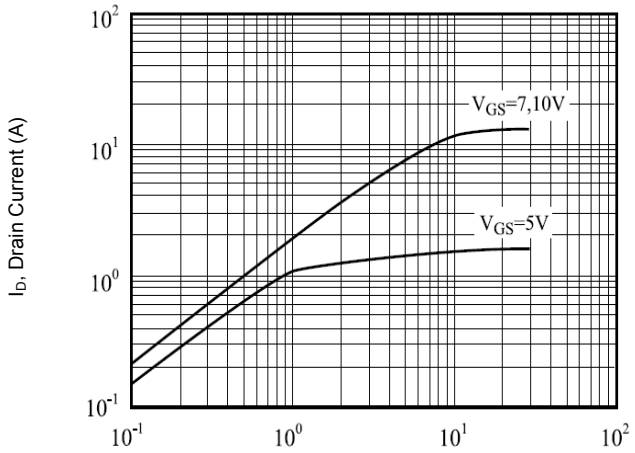
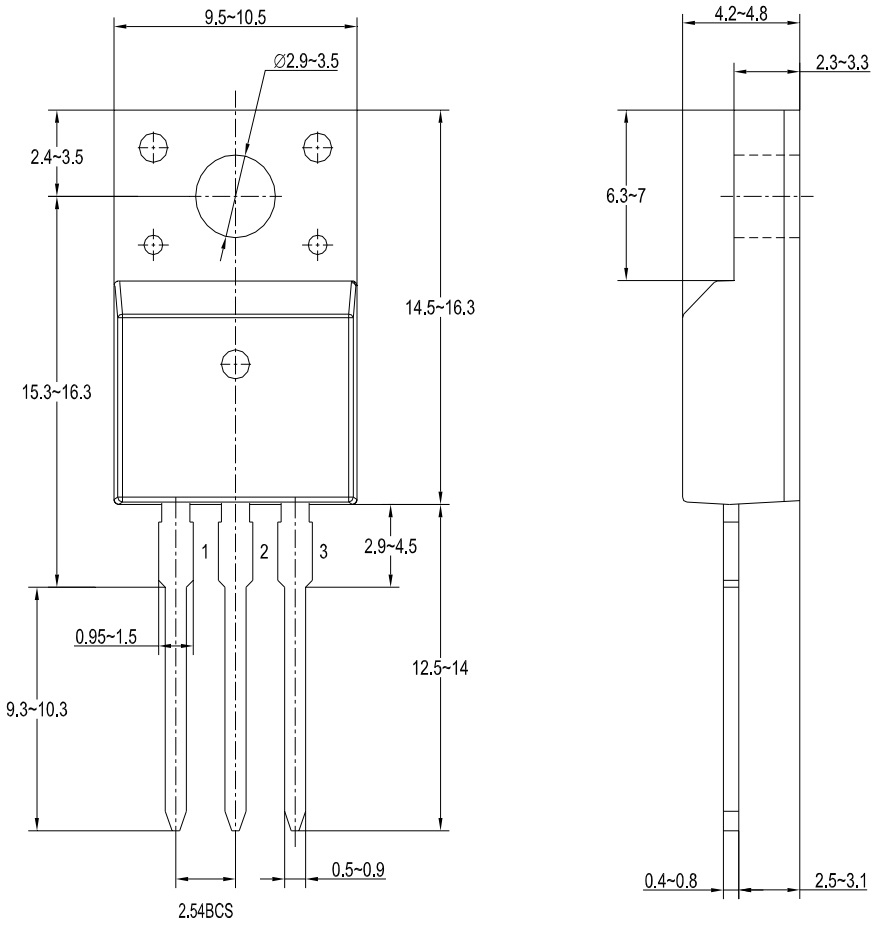


Figure 4. I_D - V_{DS}

TO-220F Package Outline



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