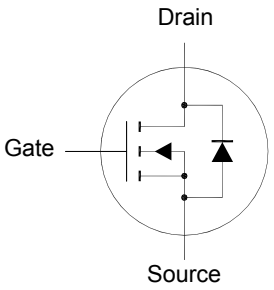
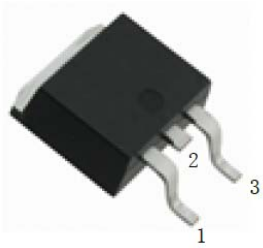
SFTN3005R

N-Channel Enhancement Mode MOSFET





1.Gate 2.Drain 3.Source

TO-252 Plastic Package

Absolute Maximum Ratings

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	± 20	V
Drain Current	T_A = 25℃ T_A = 70℃	I_D	11.8 9.5	A
Drain Current	T_C = 25℃ T_C = 70℃	I_D	48 38	A
Peak Drain Current		I_{DM}	120	A
Avalanche Current, L = 0.1 mH		I_{AR}	15	A
Avalanche Energy, L = 0.1 mH		E_{AS}	11.25	mJ
Power Dissipation	T_A = 25℃	P_D	2	W
Power Dissipation	T_C = 25℃	P_D	32.9	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 Ambient [1)]	$R_{\theta JA}$	62	℃/W
Thermal Resistance from Juntion to Case	$R_{\theta JC}$	3.8	℃/W

[1)] $R_{\theta JA}$ is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins. $R_{\theta JC}$ is guaranteed by design while $R_{\theta CA}$ is determined by the user's board design. $R_{\theta JA}$ shown below for single device operation on FR-4 in still air.

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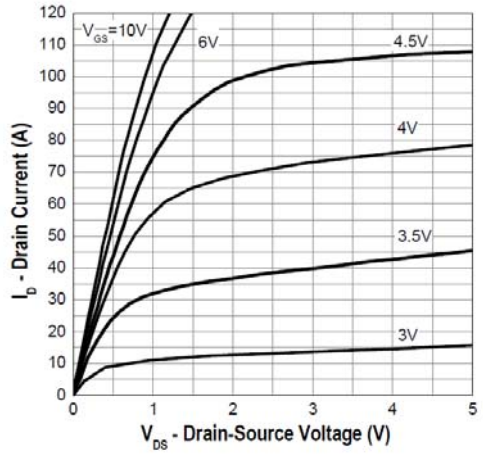
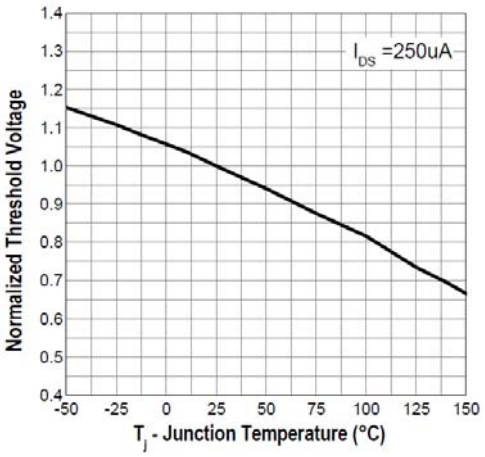
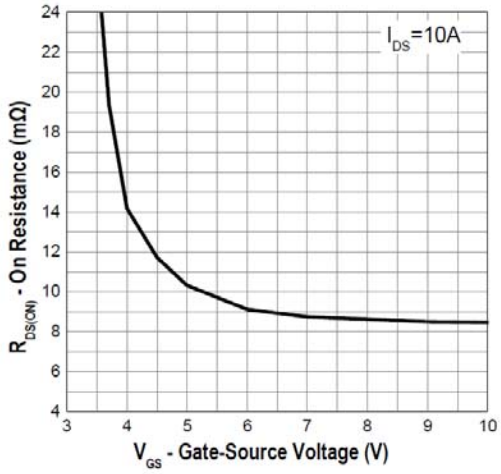
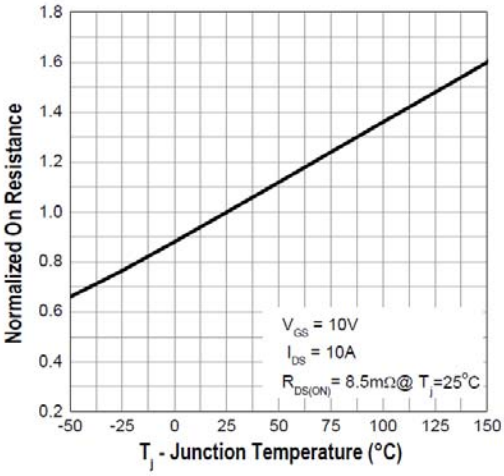
Characteristics at T_a = 25℃ unless otherwise specified

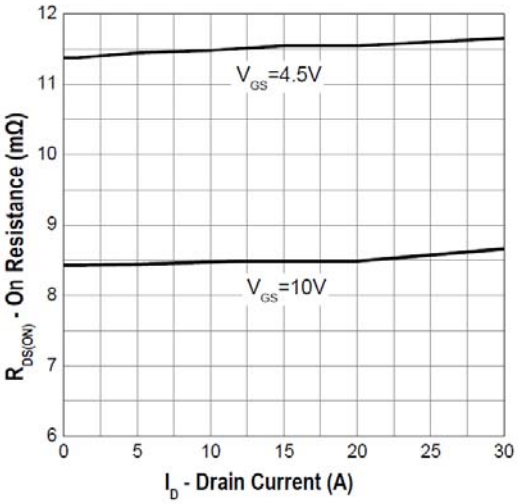
Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage at I_D = 250 μA	BV_{DSS}	30	-	-	V
Gate-Source Threshold Voltage at V_{DS} = V_{GS}, I_D = 250 μA	$V_{GS(th)}$	1.2	-	2.5	V
Drain-Source Leakage Current at V_{DS} = 24 V	I_{DSS}	-	-	1	μA
Gate Leakage Current at V_{GS} = ±20 V	I_{GSS}	-	-	±100	nA
Drain-Source On-State Resistance at V_{GS} = 10 V, I_D = 10 A	$R_{DS(on)}$	-	-	9.7	mΩ
Drain-Source On-State Resistance at V_{GS} = 4.5 V, I_D = 8 A	$R_{DS(on)}$	-	-	13.2	mΩ
Diode Forward Voltage at I_S = 10 A	V_{SD}	-	-	1.3	V
Input Capacitance at V_{GS} = 0 V, V_{DS} = 15 V, f = 1 MHz	C_{iss}	-	580	-	pF
Output Capacitance at V_{GS} = 0 V, V_{DS} = 15 V, f = 1 MHz	C_{oss}	-	95	-	pF
Reverse Transfer Capacitance at V_{GS} = 0 V, V_{DS} = 15 V, f = 1 MHz	C_{rss}	-	60	-	pF
Turn-On Delay Time at V_{DD} = 15 V, V_{GEN} = 4.5 V, I_D= 10 A, R_G = 3 Ω	$t_{d(on)}$	-	15	-	ns
Turn-On Rise Time at V_{DD} = 15 V, V_{GEN} = 4.5 V, I_D= 10 A, R_G = 3 Ω	t_r	-	12	-	ns
Turn-Off Delay Time at V_{DD} = 15 V, V_{GEN} = 4.5 V, I_D= 10 A, R_G = 3 Ω	$t_{d(off)}$	-	14	-	ns
Turn-Off Fall Time at V_{DD} = 15 V, V_{GEN} = 4.5 V, I_D= 10 A, R_G = 3 Ω	t_f	-	10	-	ns

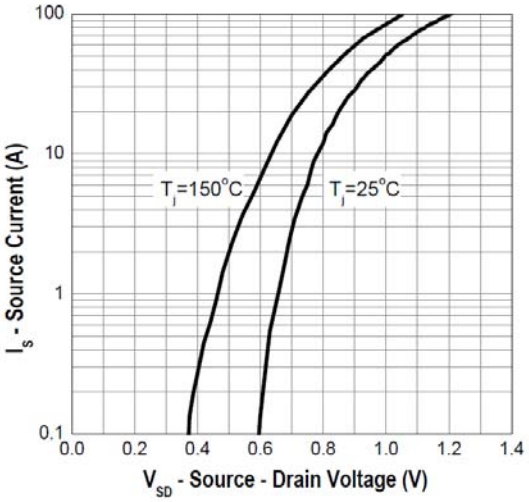












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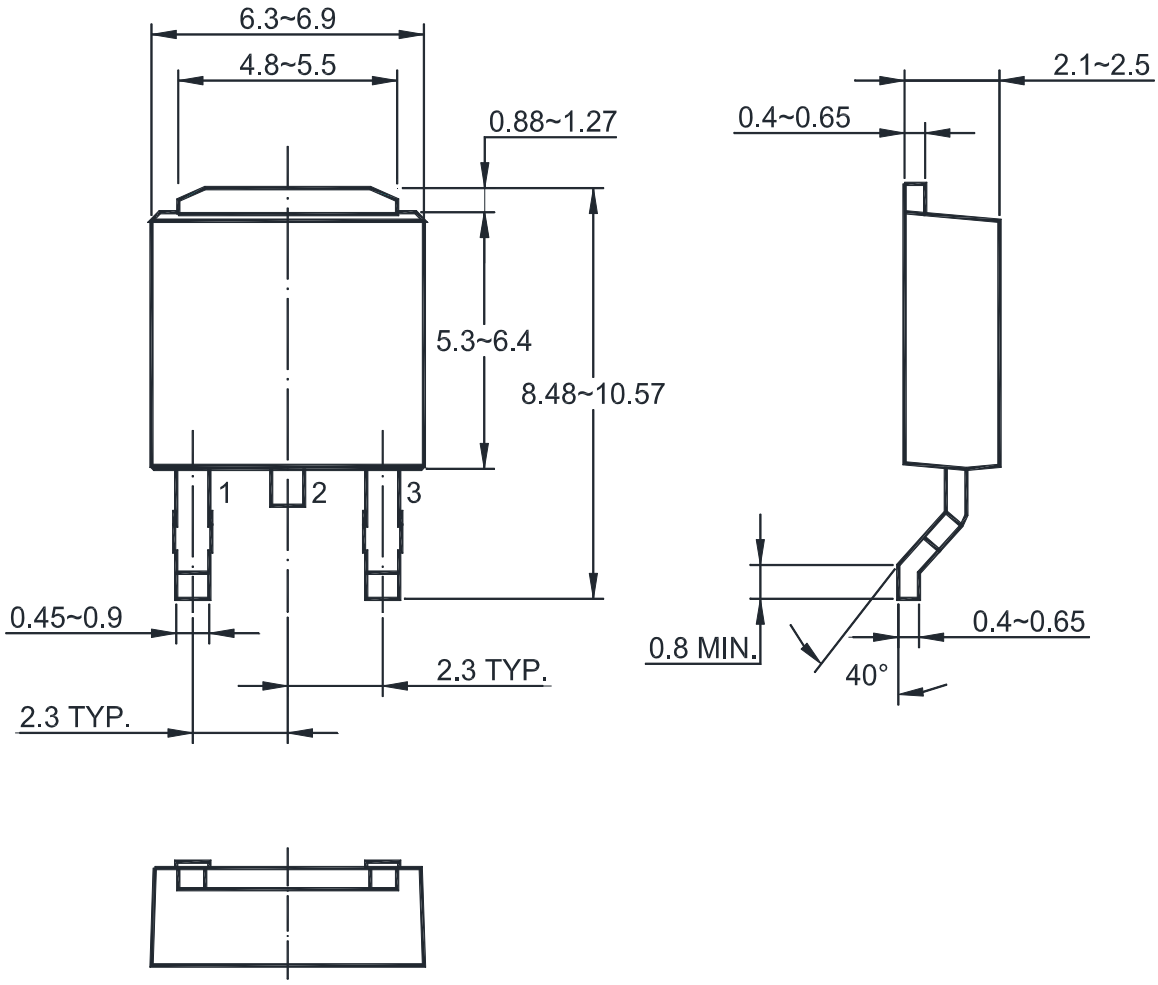
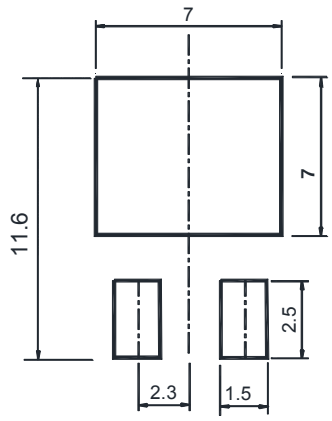
TO-252 PACKAGE OUTLINE



Recommended Soldering Footprint



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