SWR70N03

30V Single N-Channel Enhancement-Mode MOSFET

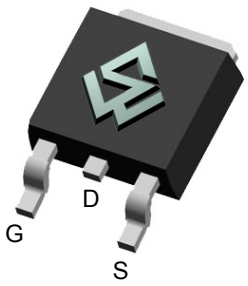
General Description

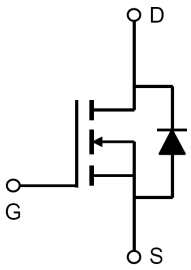
- Low gate charge.
- Use as a load switch.
- Use in PWM applications

Product Summary

- BV_{DSS} 30V
- $R_{DS(on)}$ @VGS = 10V < 6.0mΩ
- $R_{DS(on)}$ @VGS = 4.5V < 8.5mΩ

TO-252 D-PAK





Absolute Maximum Ratings (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Maximum	Units
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current (T_C=25ºC)	I_D	65	A
Drain Current (T_C=75ºC)		40	
Drain Current (T_A=25ºC)		18	
Drain Current (T_A=75ºC)		14	
Pulsed Drain Current [a]	I_{DM}	160	A
Power Dissipation [b] (T_A=25ºC)	P_D	3.6	W
Power Dissipation [b] (T_C=25ºC)		52	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 ~ +150	ºC

Electrical Characteristics (T_A = 25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS} = 0V , I_D = 250uA	30			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 24V , V_{GS} = 0V			1	uA
I_{GSS}	Gate-Body Leakage Current	V_{GS} = ±20V, V_{DS} = 0V			±100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS} , I_D = 250uA	1		2.5	V
$R_{DS(ON))}$	Drain-Source On-State Resistance	V_{GS} = 10V , I_D = 20A		4.5	6.0	mΩ
		V_{GS} = 4.5V , I_D = 15A		6.5	8.5	mΩ
Drain-Source Diode Characteristics						
V_{SD}	Diode Forward Voltage	V_{GS} = 0V , I_S = 40A			1.3	V
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS} = 15V , V_{GS} = 0V f = 1.0MHz		1358		pF
C_{oss}	Output Capacitance			56		pF
C_{rss}	Reverse Transfer Capacitance			45.5		pF
Switching Characteristics						
Q_g	Total Gate Charge	V_{DS} = 15V , I_D = 49A V_{GS} = 10V		24		nC
Q_{gs}	Gate-Source Charge			6		nC
Q_{gd}	Gate-Drain Charge			3		nC
$t_{D(ON)}$	Turn-On Delay Time	V_{DD} = 15V , ID = 40A V_{GS} = 4.5 V R_{GEN} = 1.8 ohm		9		ns
t_r	Turn-On Rise Time			10		ns
$t_{D(OFF)}$	Turn-Off Delay Time			32		ns
t_f	Turn-Off Fall Time			7		ns

a. Repetitive rating, Pulse width limited by junction temperature $T_{J(MAX)}$=150 ºC. Ratings are based on low frequency and duty cycles to keep initial T_J=25 ºC

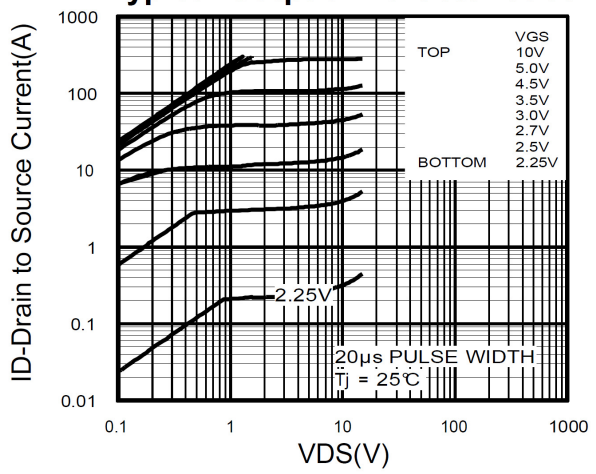
b. The power dissipation P_D is based on $T_{J(MAX)}$=150 ºC , using≤10s junction-to-ambient thermal resistance.

c. The value of $R_{\theta JA}$ is measured with the device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A = 25°C. The value in any given application depends on the user's specific board design.

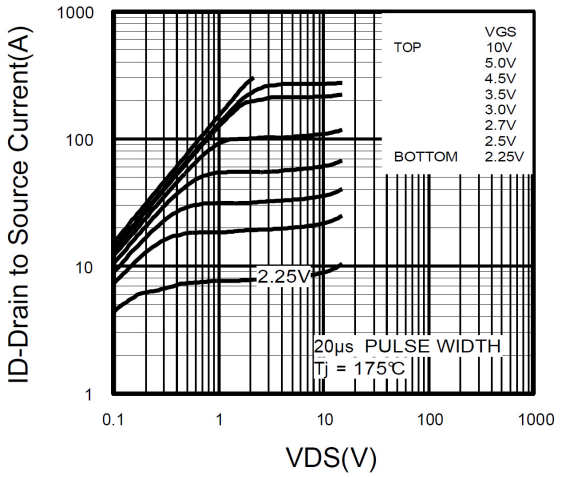
d. The $R_{\theta JA}$ is the sum of the thermal impedence from junction to lead $R_{\theta JL}$ and lead to ambient.

Typical Characteristics

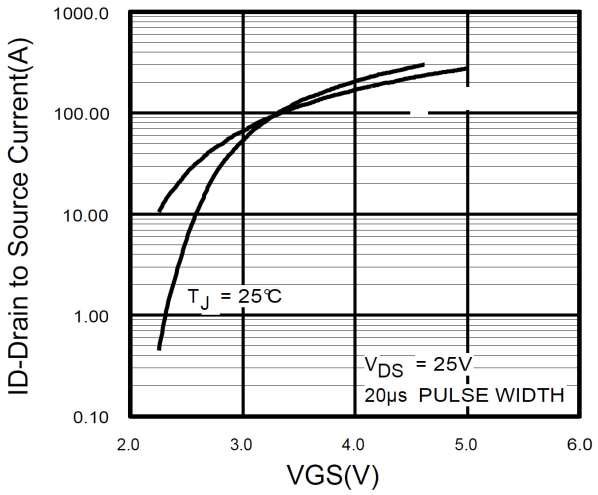
Typical Output Characteristics



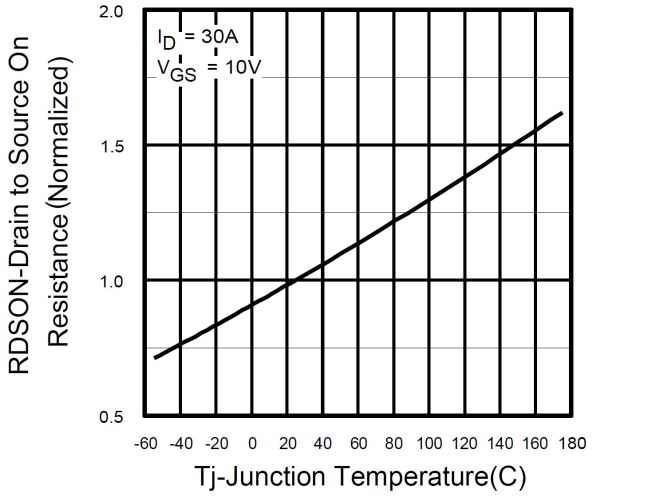
Typical Output Characteristics



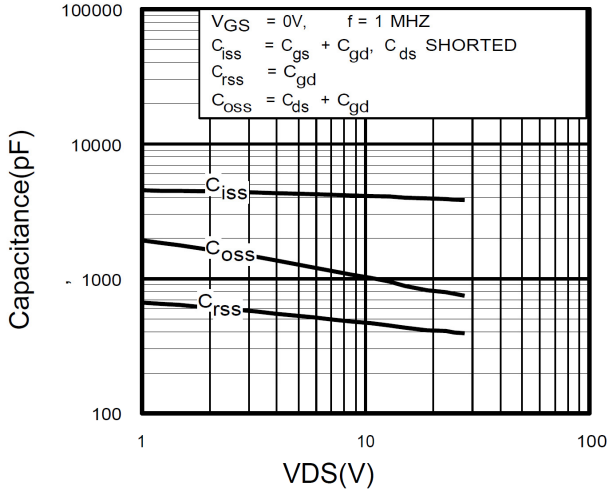
Typical Transfer Characteristics



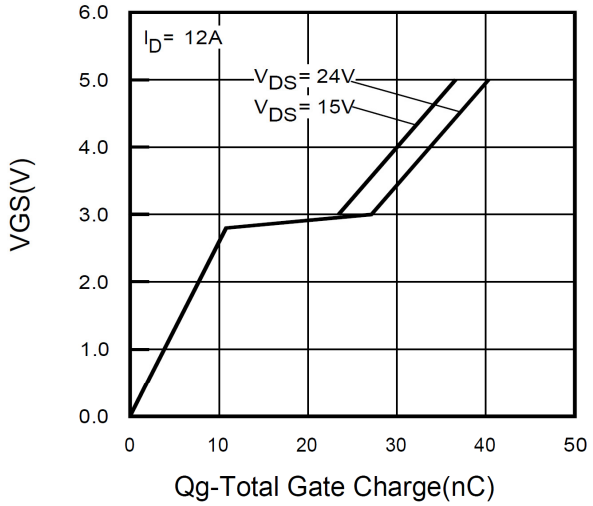
Normaliz ed RDSON vs Temperature



Typical Capacitance vs DS



Typical Gate Charge vs GS



Typical Characteristics

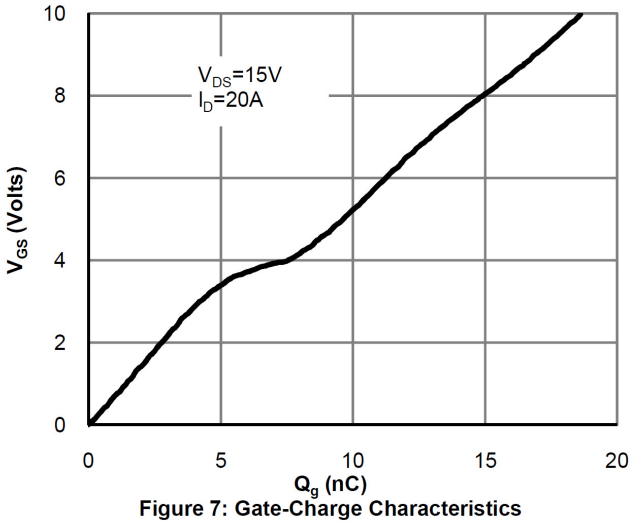


Figure 7: Gate-Charge Characteristics

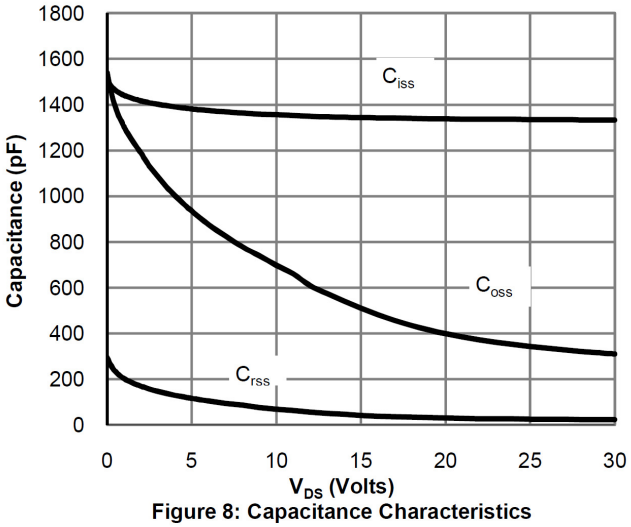


Figure 8: Capacitance Characteristics

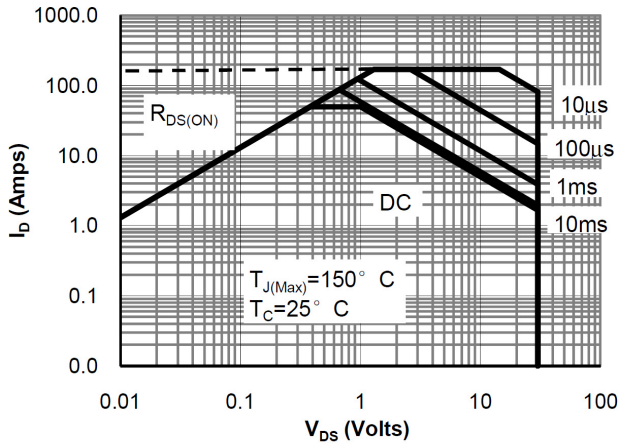


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

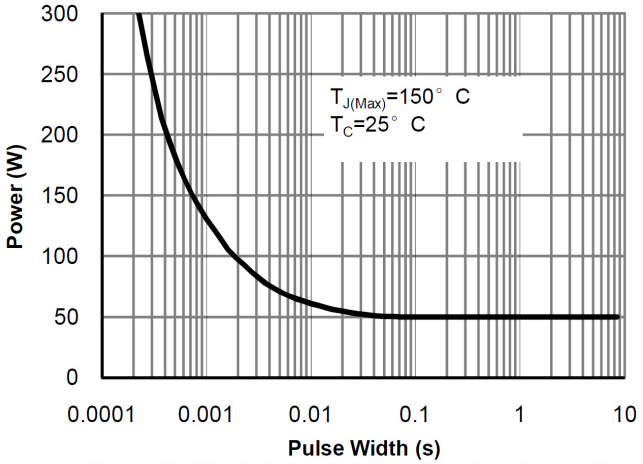


Figure 10: Single Pulse Power Rating Junction-to-Case (Note F)

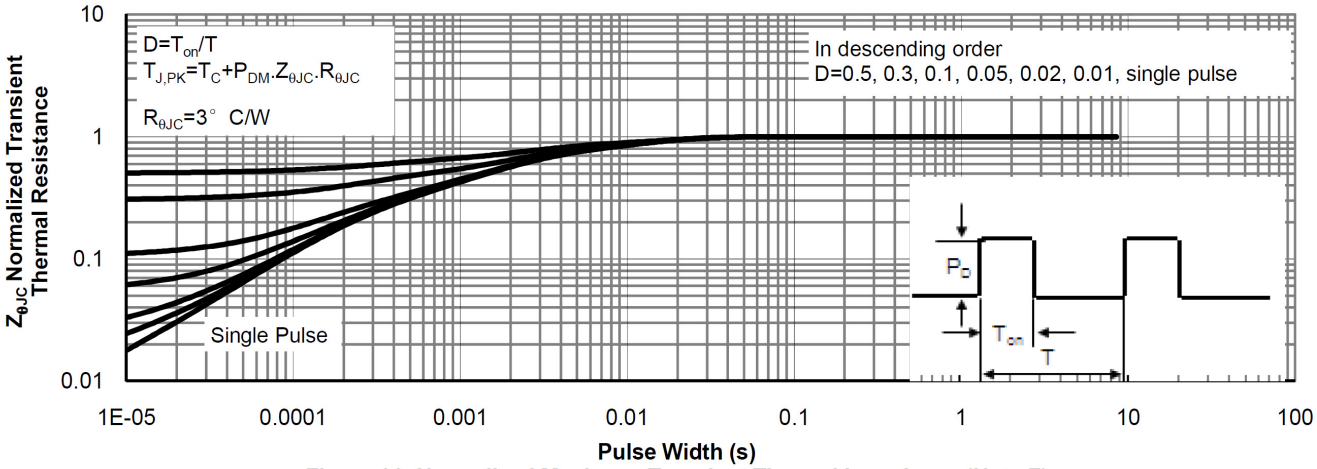
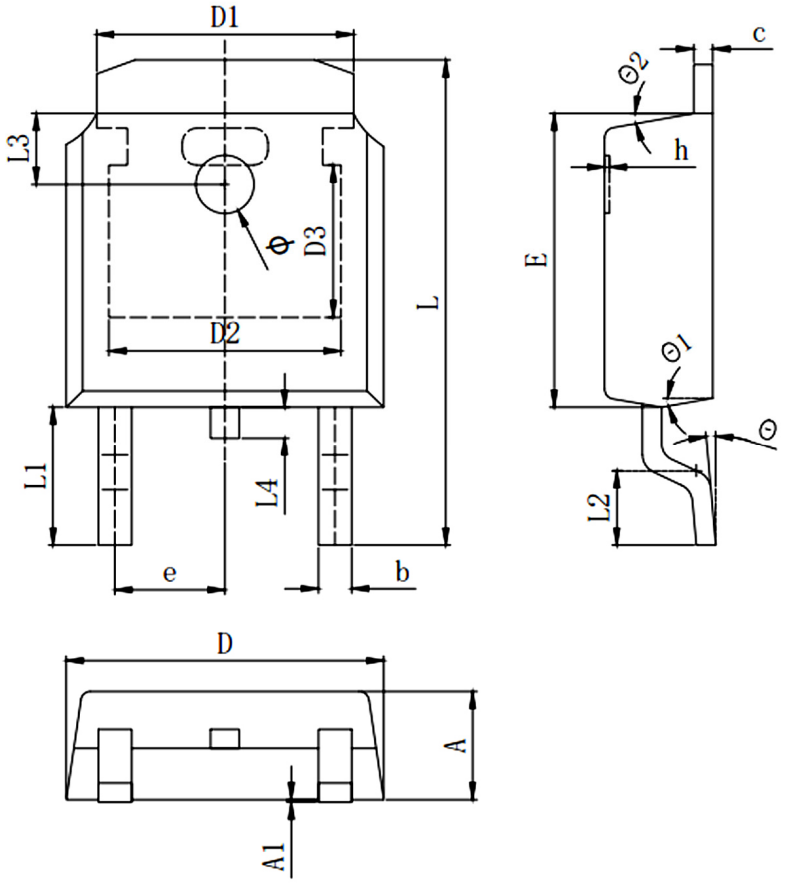


Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)

TO-252 D-PAK Package



Symbols	Millimeters		
	MIN.	Mom.	MAX.
A	2.200	2.300	2.400
A1	0.000		0.127
b	0.640	0.690	0.740
c(电镀后)	0.460	0.520	0.580
D	6.500	6.600	6.700
D1	5.334 REF		
D2	4.826 REF		
D3	3.166REF		
E	6.000	6.100	6.200
e	2.286 TYP		
h	0.000	0.100	0.200
L	9.900	10.100	10.300
L1	2.888 REF		
L2	1.400	1.550	1.700
L3	1.600 REF		
L4	0.600	0.800	1.000
Φ	1.100	1.200	1.300
θ	0°		8°
θ1	9° TYP		
θ2	9° TYP		

单击下面可查看定价，库存，交付和生命周期等信息

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