

20V N-Channel Enhancement Mode MOSFET

Features

$V_{DS} (V) = 20 V$

$I_D = 2.8 A$

$R_{DS(ON)} = 60m\Omega @ V_{GS} = 4.5V$

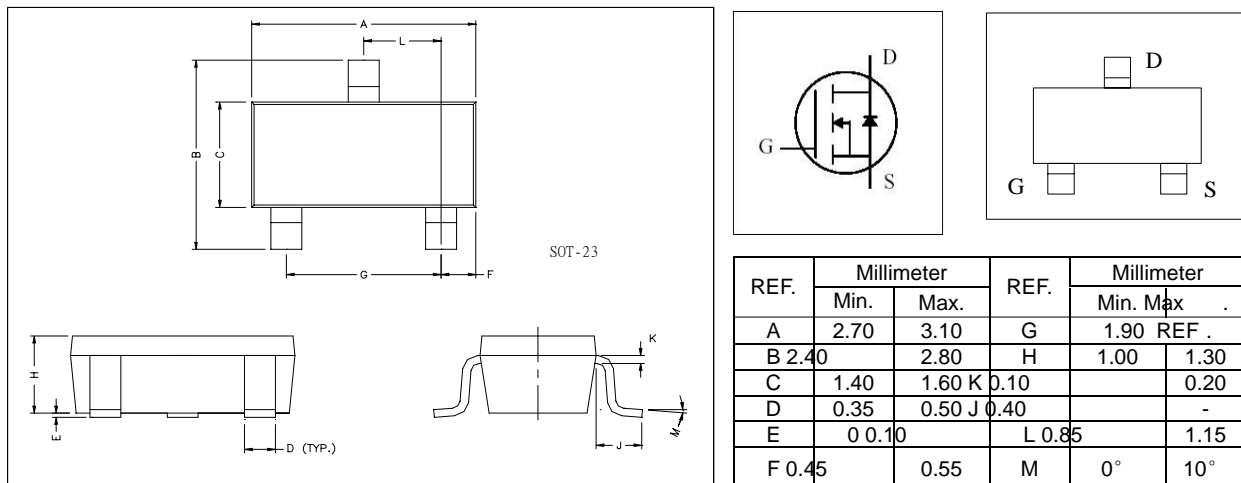
$R_{DS(ON)} = 70m\Omega @ V_{GS} = 2.5V$

Features

Advanced trench process technology

High Density Cell Design For Ultra Low On-Resistance

Package Dimensions



Absolute Maximum Ratings @ $T_A = 25^\circ C$ unless otherwise noted

Parameter S	ymbol	Ratings	Unit
Drain-Source Voltage	V_{DSS}	20	V
Gate-Source Voltage	V_{GSS}	± 12	
Drain Current (Note 1)	I_D 2.8		A
Power Dissipation (Note 1)	P_D	350	mW
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ C$

Note: 1. Mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch, for each single die.

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Electrical Characteristics @ T_A = 25°C unless otherwise specified

Parameter Sy	mbol	Test Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS (Note 2)						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250uA	20	25	--	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 20V, V _{GS} = 0V --	--	--	1	uA
Gate-Body Leakage	I _{GSS}	V _{GS} = ±12V, V _{DS} = 0V --	--	--	±100	nA
ON CHARACTERISTICS (Note 2)						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} = V _{GS} , I _D = 250uA	0.6	0.76	--	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} = 4.5V, I _D = 3A	--	60	70	mΩ
		V _{GS} = 2.5V, I _D = 2A	--	70	80	
Forward Transconductance	G _{FS}	V _{DS} = 10V, I _D = 6A --	--	5	--	S
DYNAMIC CHARACTERISTICS						
Input Capacitance	C _{ISS}	V _{DS} = 8V, V _{GS} = 0V F = 1.0MHz	--	562	--	pF
Output Capacitance	C _{OSS}		--	106	--	
Reverse Transfer Capacitance	C _{RSS}		--	75	--	
Total Gate Charge	Q _G	V _{DS} =10V, I _D =6A, V _{GS} =4.5V	--	4.86	--	nC
Gate-Source Charge	Q _{GS}		--	0.92	--	
Gate-Drain Q	Q _{GD}		--	1.4	--	
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	T _{D(ON)}	V _{DD} = 10V, I _D = 1A, V _{GEN} = 4.5V, R _G = 6Ω	--	18	--	ns
Turn-Off Delay Time	T _{D(OFF)}		--	25	--	

Note: 2. Short duration test pulse used to minimize self-heating effect.

Typical Performance Characteristics

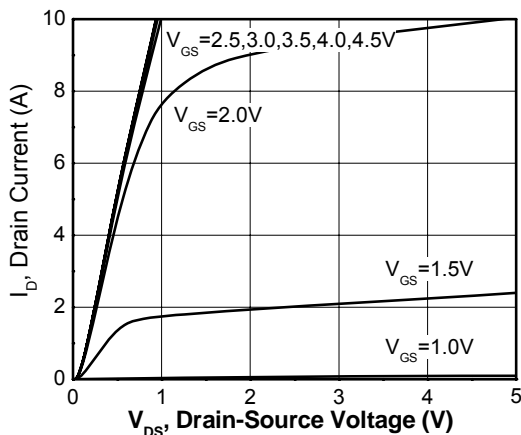


Figure 1. Output Characteristics

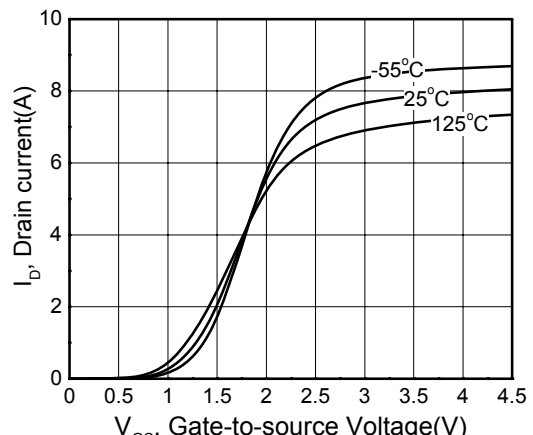


Figure 2. Transfer Characteristics

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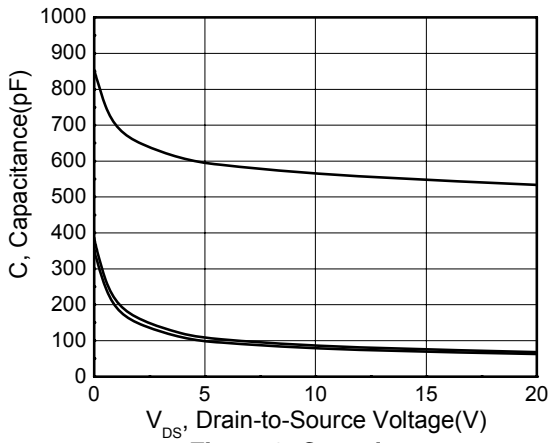


Figure 3. Capacitance

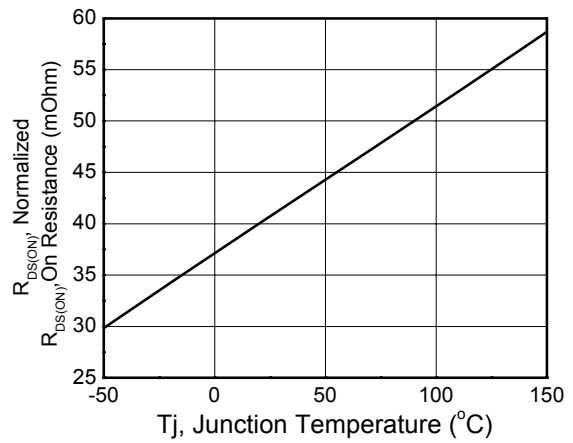


Figure 4. On Resistance Vs. Temperature

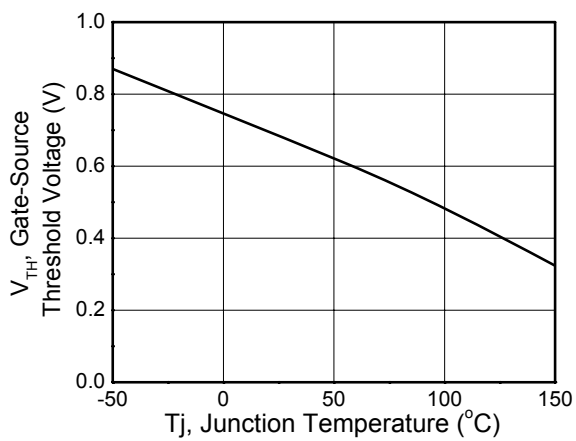


Figure 5. Gate Thershold Vs. Temperature

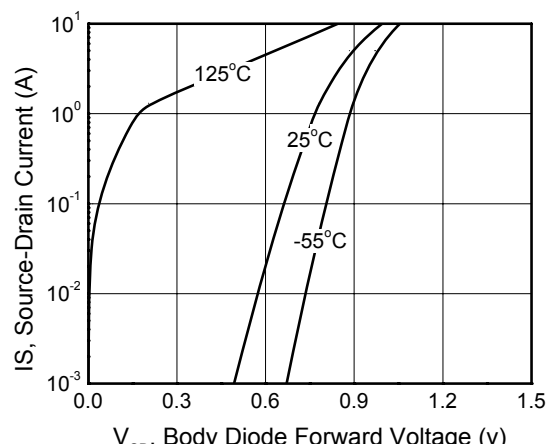


Figure 6. Body Diode Forward Voltage

Vs. Source Current