



# Common Drain N-Channel Enhancement Mode Field Effect Transistor

## Transistor

### ● Features

For a single mosfet

$V_{DS}(V) = 20V, I_D = 6A$

$R_{DS(ON)} = 22m\Omega @V_{GS} = 4.50V$

$R_{DS(ON)} = 24m\Omega @V_{GS} = 3.85V$

$R_{DS(ON)} = 30m\Omega @V_{GS} = 2.50V$

Advanced trench process technology

High Density Cell Design For Ultra Low On-Resistance

High Power and Current handing capability

Fully Characterized Avalanche Voltage and Current

### ● General Description

Case: TSSOP8

### ● Package Information

Case Material: Molded Plastic. UL Flammability Classification

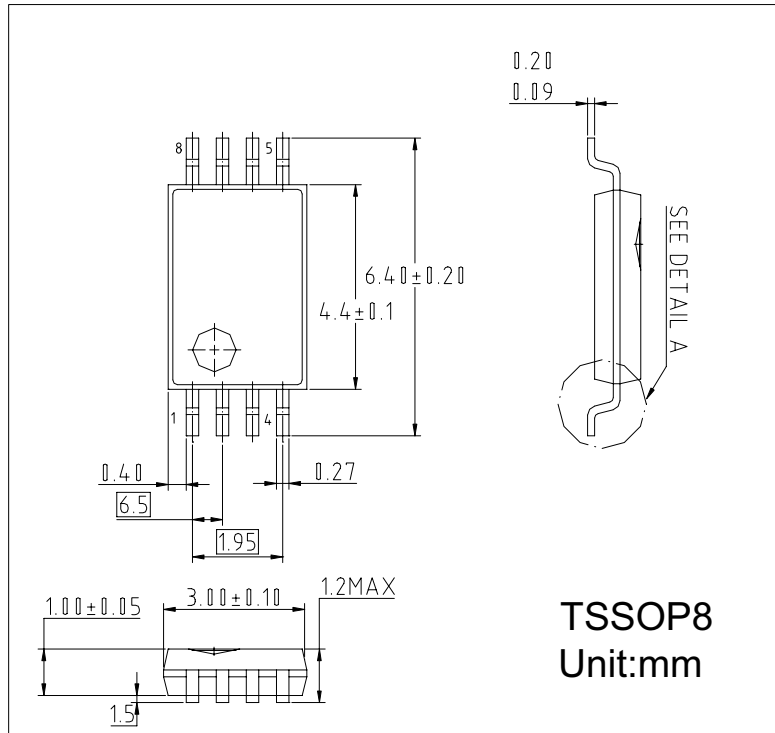
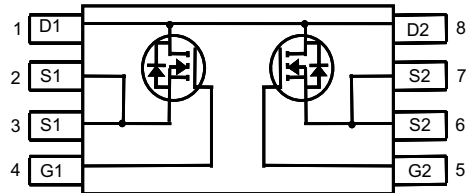
Rating 94V-0

Moisture Sensitivity: Level 1 per J-STD-020C

Terminals: Solderable per MIL-STD-202, Method 208

### ● Pin configurations

See Diagram below





● **Absolute Maximum Ratings** @  $T_A = 25^\circ\text{C}$  unless otherwise specified

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	$V_{DSS}$	20	V
Gate-Source Voltage	$V_{GSS}$	$\pm 12$	
Drain Current (Note 1)	$I_D$	6	A
	$I_{DM}$	30	
Total Power Dissipation (Note 1)	$P_D$	1500	mW
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

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

● **Electrical Characteristics** @  $T_A = 25^\circ\text{C}$  unless otherwise specified

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>OFF CHARACTERISTICS (Note 2)</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu\text{A}$	20	--	--	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 20V, V_{GS} = 0V$	--	--	1	$\mu\text{A}$
Gate-Body Leakage	$I_{GSS}$	$V_{GS} = \pm 12V, V_{DS} = 0V$	--	--	$\pm 100$	nA
<b>ON CHARACTERISTICS (Note 2)</b>						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	0.6	0.8	1.2	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 6A$	--	22	25	m $\Omega$
		$V_{GS} = 3.85V, I_D = 5A$	--	24	27	
		$V_{GS} = 2.5V, I_D = 4A$	--	30	35	
Forward Transconductance	$G_{FS}$	$V_{DS} = 10V, I_D = 6A$	--	5	--	S
<b>DYNAMIC CHARACTERISTICS</b>						
Input Capacitance	$C_{ISS}$	$V_{DS} = 10V, V_{GS} = 0V$ $F = 1.0\text{MHz}$	--	560	--	pF
Output Capacitance	$C_{OSS}$		--	75	--	
Reverse Transfer Capacitance	$C_{RSS}$		--	70	--	
Total Gate Charge	$Q_G$	$V_{DS} = 10V, I_D = 6A,$ $V_{GS} = 4.5V$	--	5	--	nC
Gate-Source Charge	$Q_{GS}$		--	0.9	--	
Gate-Drain	$Q_{GD}$		--	1.4	--	
<b>SWITCHING CHARACTERISTICS</b>						
Turn-On Delay Time	$T_{D(ON)}$	$V_{DD} = 10V, I_D = 1A,$ $V_{GEN} = 4.5V, R_G = 6\Omega$	--	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

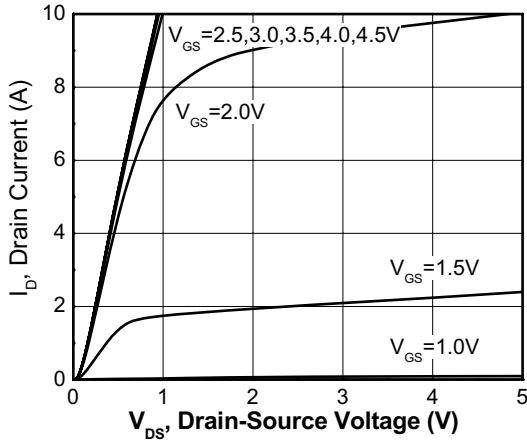


Figure 1. Output Characteristics

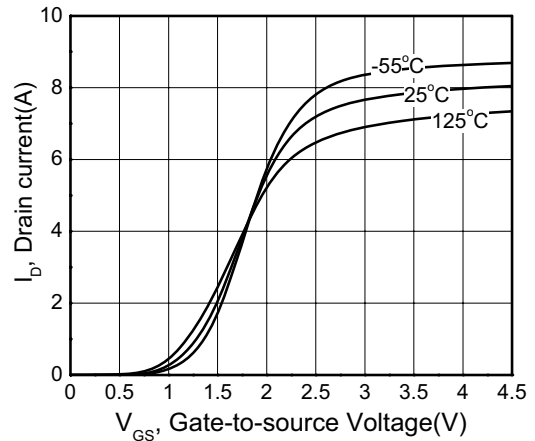


Figure 2. Transfer Characteristics

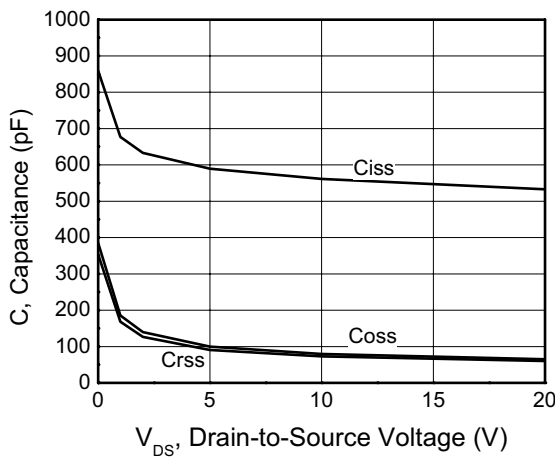


Figure 3. Capacitance

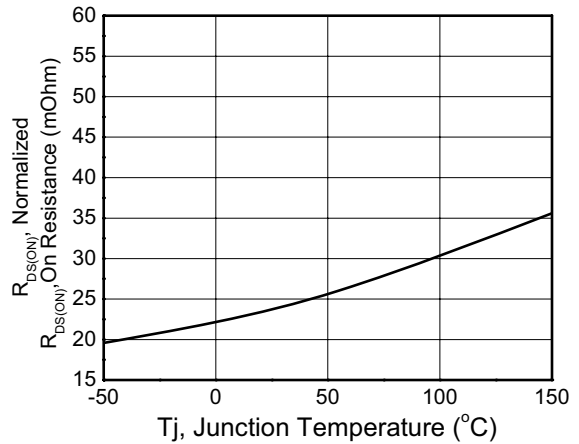


Figure 4. On Resistance Vs. Temperature

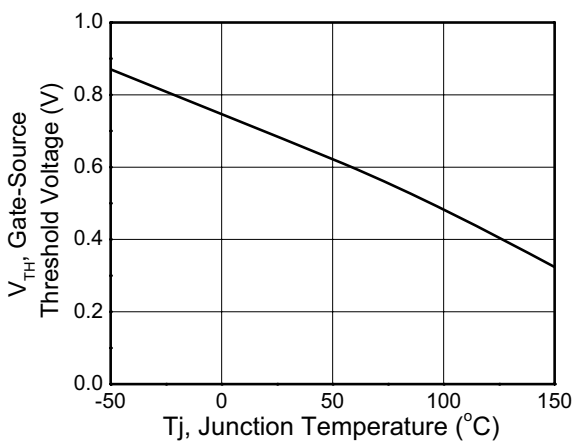


Figure 5. Gate Threshold Vs. Temperature

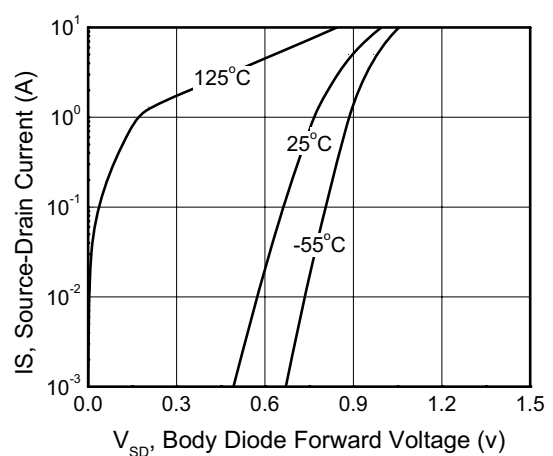


Figure 6. Body Diode Forward Voltage Vs. Source Current



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