



Common Drain N-Channel Enhancement Mode MOSFET

● Features

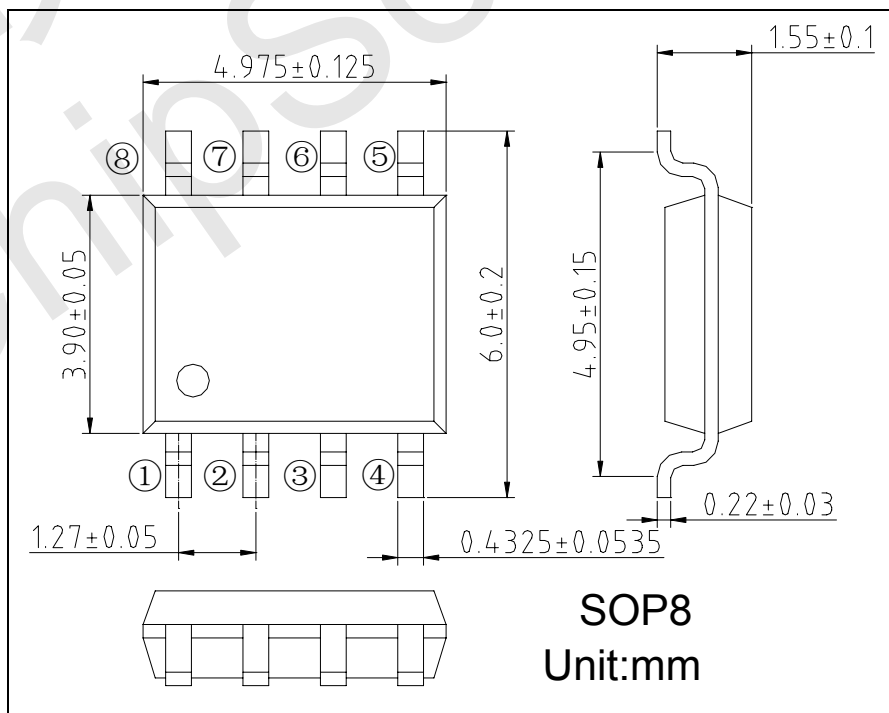
VDS	VGS	RDSon TYP	ID
20V	±12V	21mR@4V5	6A
		22mR@3V85	
		26mR@2V5	

Advanced trench process technology
 High Density Cell Design for Ultra Low On-Resistance
 High Power and Current handling capability
 Fully Characterized Avalanche Voltage and Current

● General Description

Case: SOP8
 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

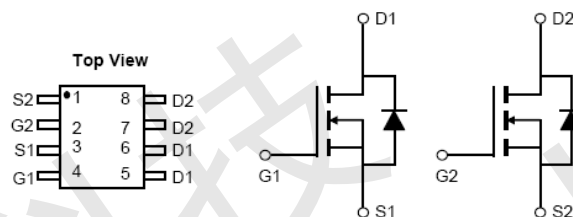
● Package Information



● Applications

- Li-ion battery protection ;
- Load switch

● Pin configuration



PIN NUMBER	NAME	FUNCTION
SOP8		
1	S2	SOURCE2
2	G2	GATE2
3	S1	SOURCE1
4	G1	GATE1
5	D1	DRAIN1
6	D1	DRAIN1
7	D2	DRAIN2
8	D2	DRAIN2



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

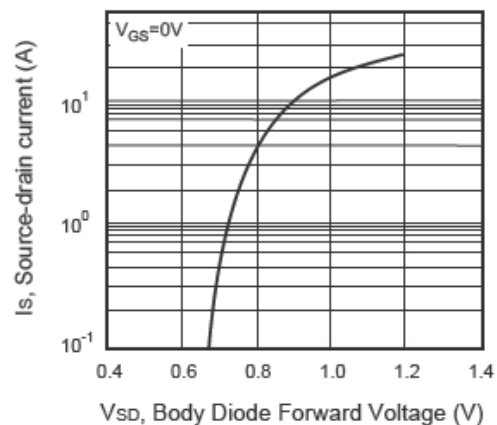
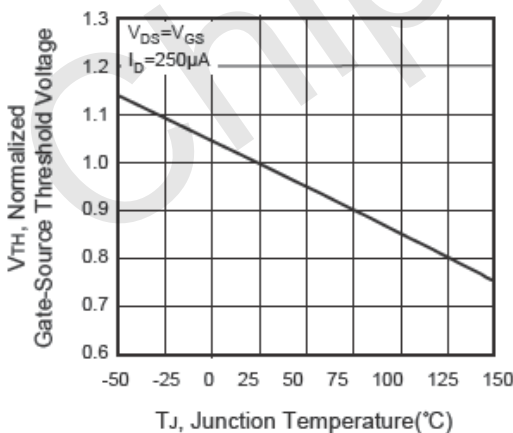
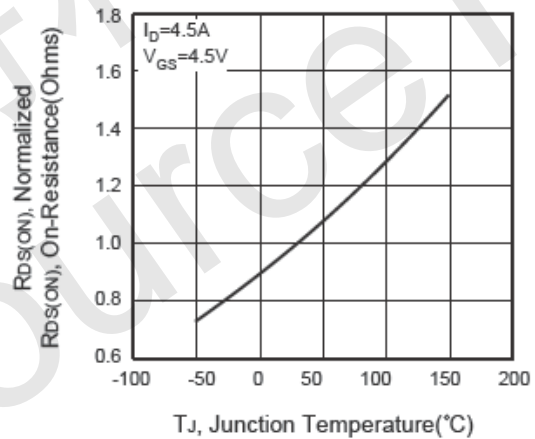
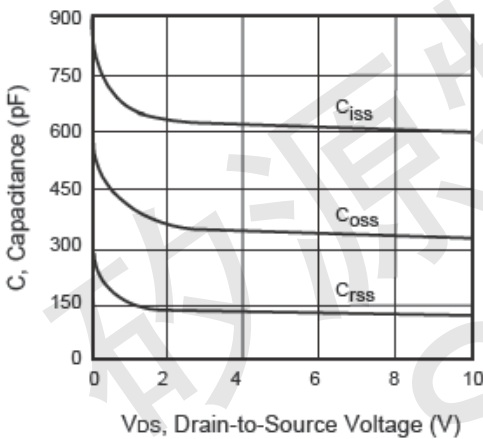
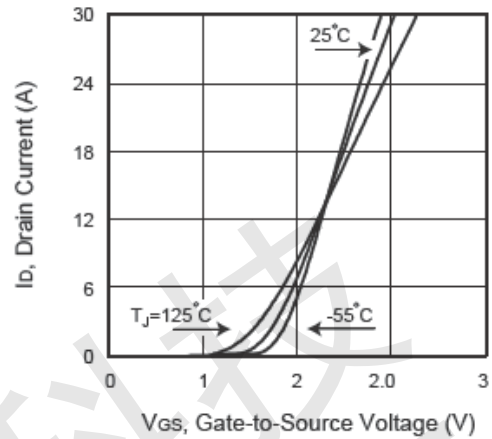
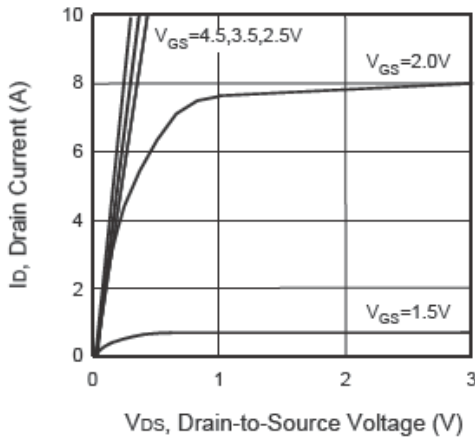
Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 12	
Drain Current	I_D	6	A
Total Power Dissipation	P_D	1.25	mW
Operating and Storage Temperature Range	T_{opr}	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55/150	$^\circ\text{C}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS (Note 2)						
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}	$V_{DS} = 16V, V_{GS} = 0V$	--	--	1000	nA
Gate-Body Leakage	I_{GSS}	$V_{GS} = \pm 12V, V_{DS} = 0V$	--	--	± 100	nA
ON CHARACTERISTICS (Note 2)						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	0.5	0.75	1	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 2A$	--	21	24	mR
		$V_{GS} = 3.8V, I_D = 2A$	--	22	25	
		$V_{GS} = 2.5V, I_D = 2A$	--	26	34	
Forward Transconductance	G_{FS}	$V_{DS} = 5V, I_D = 4.5A$	--	10	--	S
Drain-Source Diode Forward Current	I_S		--	--	1.7	A
Source-drain (diode forward) voltage	V_{SD}	$V_{GS} = 0V, I_D = 1.25A$	--	0.8	1.0	V
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{ISS}	$V_{DS} = 8V, V_{GS} = 0V$ $F = 1.0\text{MHz}$	--	600	--	pF
Output Capacitance	C_{OSS}		--	330	--	
Reverse Transfer Capacitance	C_{RSS}		--	140	--	
Total Gate Charge	Q_G	$V_{DS} = 10V, I_D = 6A,$ $V_{GS} = 4.5V$	--	10	15	nC
Gate-Source Charge	Q_{GS}		--	2.3	--	
Gate-Drain	Q_{GD}		--	2.9	--	
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	$T_{D(ON)}$	$V_{DD} = 10V, R_L = 10\Omega, I_D = 1A,$ $V_{GEN} = 4.5V, R_G = 6R$	--	8	20	ns
Rise Time	t_r		--	10	25	
Turn-Off Delay Time	$T_{D(OFF)}$		--	35	70	
Fall-Time	t_f		--	30	60	



● Typical Performance Characteristics



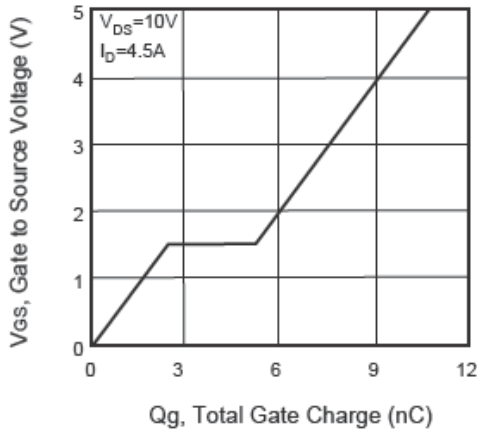


Figure 7. Gate Charge

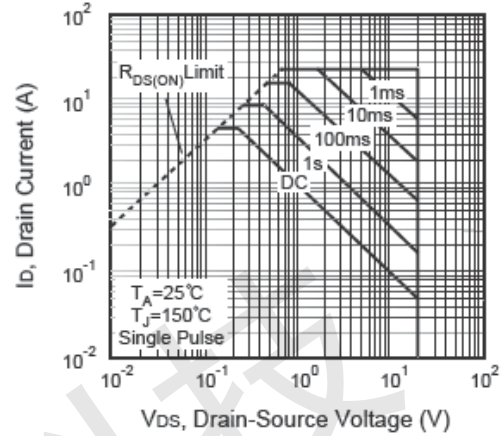


Figure 8. Maximum Safe Operating Area

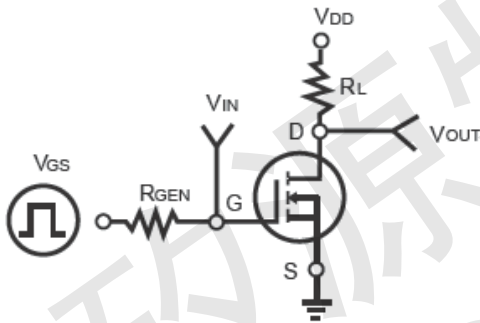


Figure 9. Switching Test Circuit

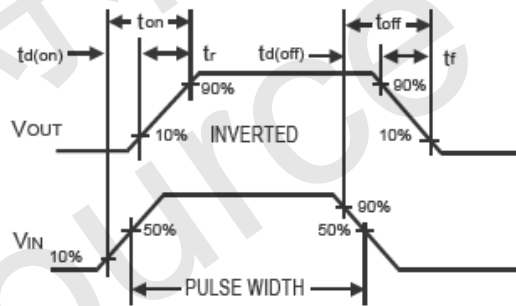


Figure 10. Switching Waveforms

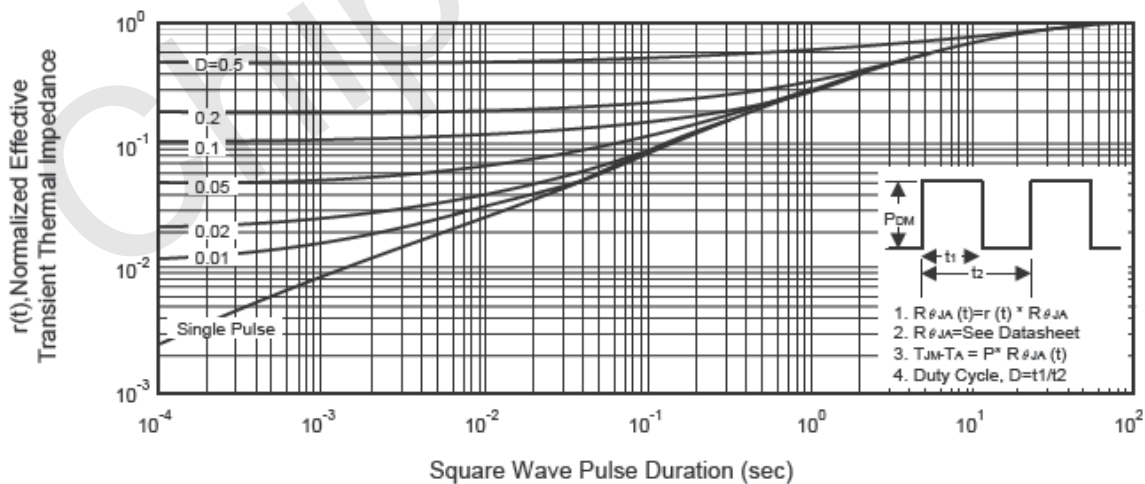


Figure 11. Normalized Thermal Transient Impedance Curve