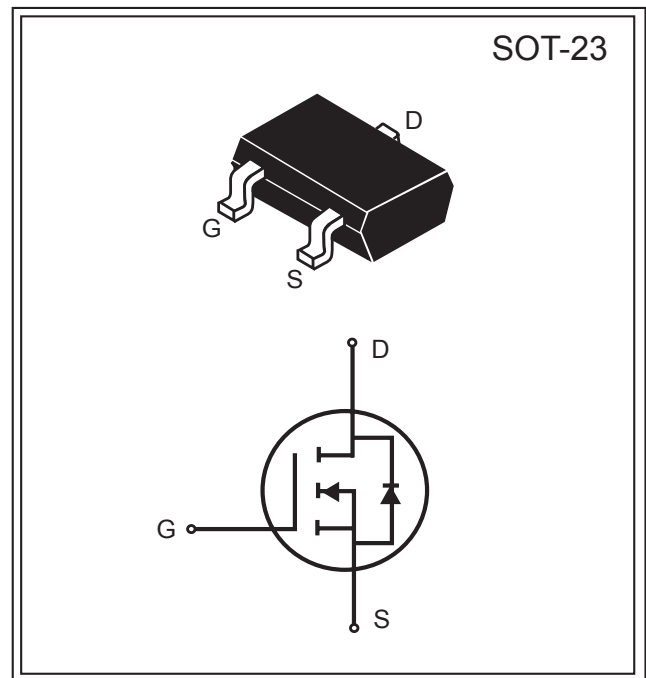


Product Summary		
V _{DS} (V)	I _D (A)	R _{DS(ON)} (mΩ) Max
60V	3.2A	60 @V _{GS} = 10V
		85 @V _{GS} = 4.5V



FEATURES

- ◆ Super high density cell design for low R_{DS(ON)}.
- ◆ Rugged and reliable.
- ◆ SOT-23 package.
- ◆ Pb free.

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

Parameter	Symbol	Limited	Unit
Drain-Source Voltage	V _{DS}	60	V
Gate-Source Voltage	V _{GS}	±20	
Drain Current-Continuous @ T _a	I _D	25 °C	3.2
		70 °C	2.6
-Pulsed ^b	I _{DM}	12	A
Drain-Source Diode Forward Current ^a	I _S	1.25	
Maximum Power Dissipation ^a	P _D	T _a =25 °C	1.25
		T _a =70 °C	0.8
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55 to 150	°C

THERMAL CHARACTERISTICS

Thermal Resistance, Junction-to-Ambient ^a	R _{θJA}	100	°C/W
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South Sea Semiconductor reserves the right to make changes to improve reliability or manufacturability without advance notice.

South Sea Semiconductor, June 2008 (Rev 1.0)

**Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)**

Parameter	Symbol	Condition	Min	Typ ^c	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\ \mu A$	60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=48V, V_{GS}=0V$			1	μA
Gate-Body Leakage	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\ \mu A$	1	1.8	2.5	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=3.2A$		50	60	$m\Omega$
		$V_{GS}=4.5V, I_D=2.5A$		72	85	
On-State Drain Current	$I_{D(ON)}$	$V_{DS}=5V, V_{GS}=10V$	8			A
Forward Transconductance	g_{FS}	$V_{DS}=5V, I_D=3.2A$		5		S
Input Capacitance	C_{ISS}	$V_{DS}=30V$		700		pF
Output Capacitance	C_{OSS}	$V_{GS}=0V$		90		
Reverse Transfer Capacitance	C_{RSS}	$f=1.0MHz$		60		
Turn-On Delay Time	$t_{D(ON)}$	$V_{DD}=30V,$ $I_D=1A,$ $V_{GS}=10V,$ $R_{GEN}=6\Omega,$ $R_L=15\Omega$		5		ns
Rise Time	t_r			4		
Turn-Off Delay Time	$t_{D(OFF)}$			30		
Fall Time	t_f			7		
Total Gate Charge	Q_g	$V_{DS}=30V,$		12		nC
Gate-Source Charge	Q_{gs}	$I_D=3.2A,$		1.8		
Gate-Drain Charge	Q_{gd}	$V_{GS}=10V$		1.7		
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_D=1A$		0.9	1.2	V

Notes :

- Surface Mounted on FR4 Board, $t \leq 10$ sec.
- Pulse Test : Pulse Width $\leq 300\ \mu s$, Duty Cycle $\leq 2\%$.
- Guaranteed by design, not subject to production testing.

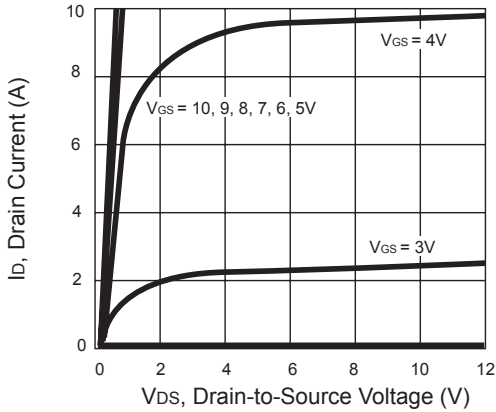


Figure 1. Output Characteristics

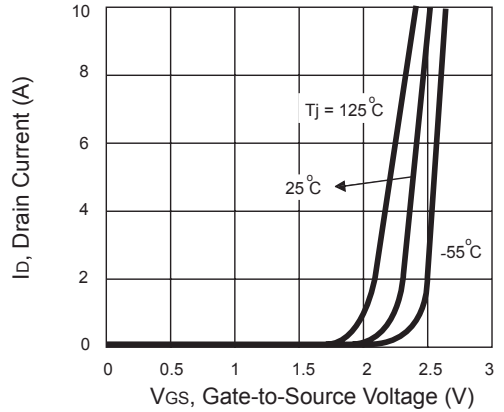


Figure 2. Transfer Characteristics

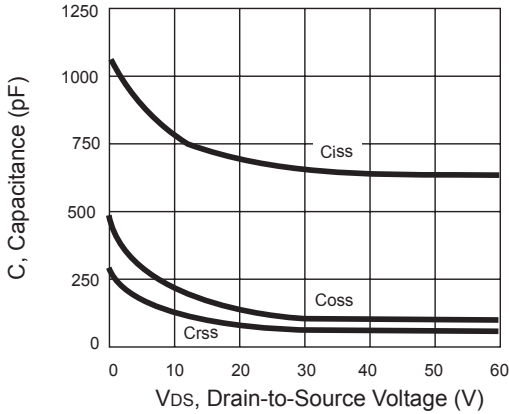


Figure 3. Capacitance

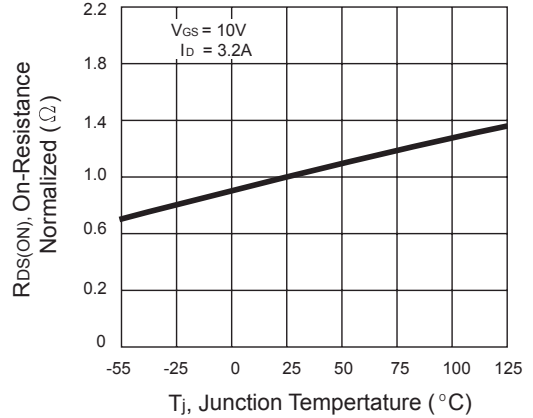


Figure 4. On-Resistance Variation with Temperature

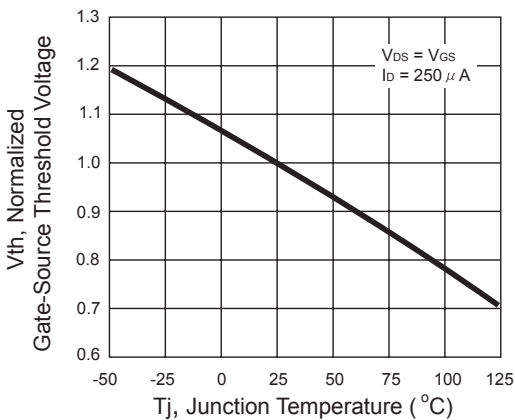


Figure 5. Gate Threshold Variation with Temperature

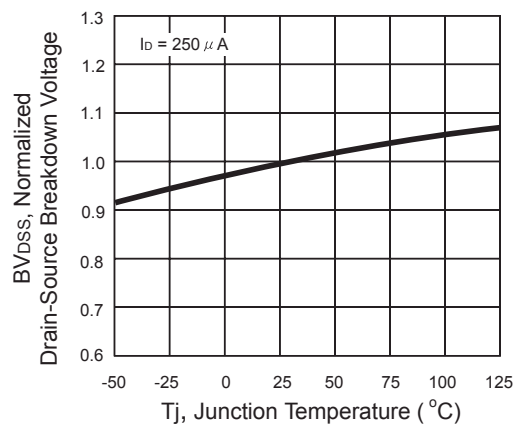


Figure 6. Breakdown Voltage Variation with Temperature

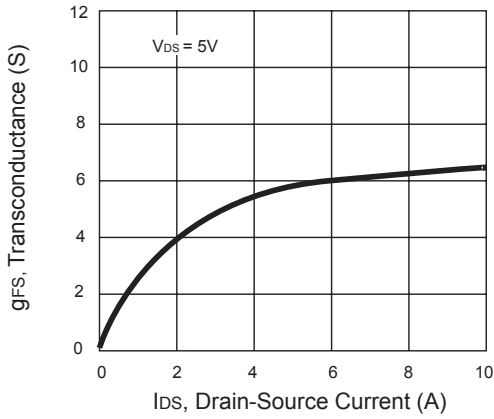


Figure 7. Transconductance Variation with Drain Current

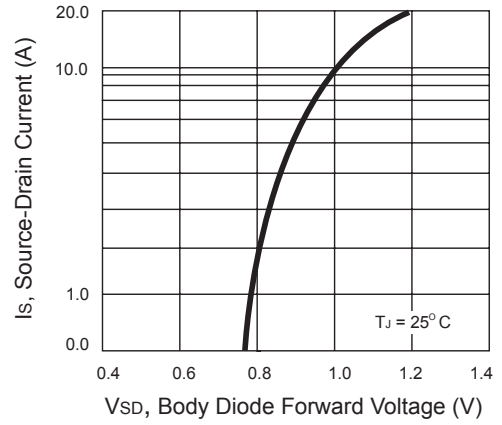


Figure 8. Body Diode Forward Voltage Variation with Source Current

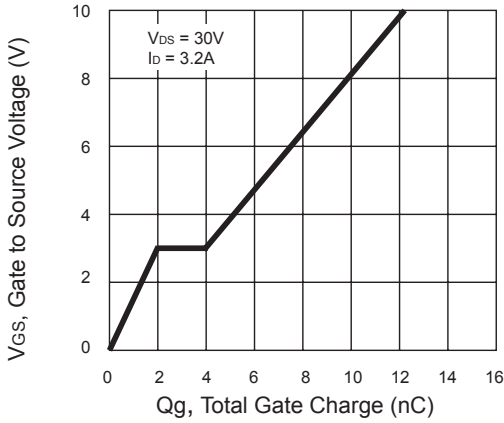


Figure 9. Gate Charge

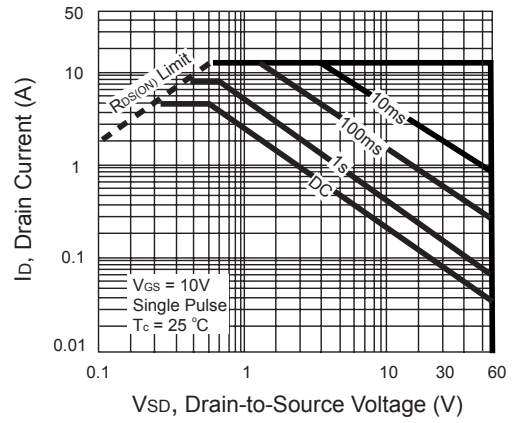


Figure 10. Maximum Safe Operating Area

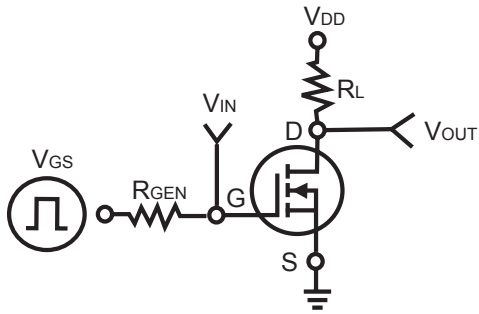


Figure 11. Switching Test Circuit

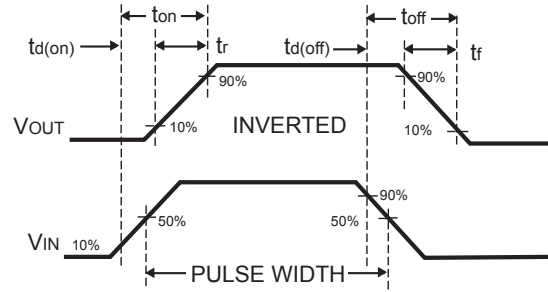


Figure 12. Switching Waveforms

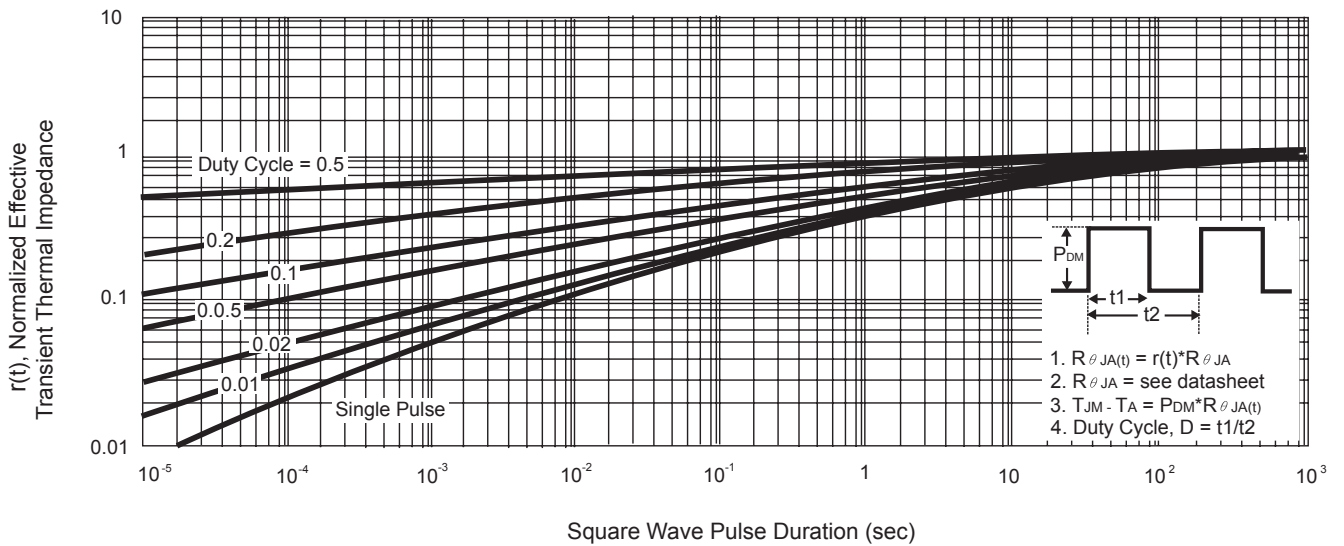


Figure 13. Normalized Thermal Transient Impedance Curve