



South Sea Semiconductor

SSN0610B

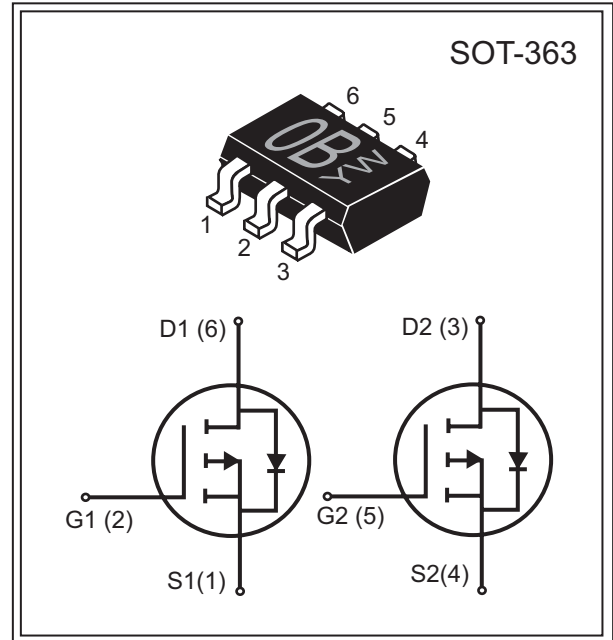
Dual P-Channel Enhancement Mode MOSFET

Product Summary		
V_{DS} (V)	I_D (A)	$R_{DS(ON)}$ (Ω) Max
-60V	-0.130A	7.5 @ $V_{GS} = 10V$
		10.0 @ $V_{GS} = 4.5V$

FEATURES

- ◆ Super high dense cell design for low $R_{DS(ON)}$.
- ◆ Rugged and reliable.
- ◆ SOT-363 package.
- ◆ Pb Free.

Marking Code : 0B



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ C$ unless otherwise noted)			
Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous @ $T_J = 125^\circ C$	I_D	-130	mA
-Pulsed ^b	I_{DM}	-1	A
Drain-Source Diode Forward Current ^a	I_S	-130	mA
Maximum Power Dissipation ^a	P_D	200	mW
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ C$
THERMAL CHARACTERISTICS			
Thermal Resistance, Junction-to-Ambient ^a	$R_{\theta JA}$	625	$^\circ C/W$

South Sea Semiconductor reserves the right to make changes to improve reliability or manufacturability without advance notice.

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N-Channel Electrical Characteristics (TA = 25°C unless otherwise noted)						
Parameter	Symbol	Condition	Min	Typ ^c	Max	Unit
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =-10 μA	-60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-60V, V _{GS} =0V			-1	μA
Gate-Body Leakage	I _{GSS}	V _{GS} = ±20V, V _{DS} =0V			±10	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =-250 μA	-1		-3	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =-10V, I _D =-0.5A			7.5	Ω
		V _{GS} = -4.5V, I _D =-0.025A			10	
On-State Drain Current	I _{D(ON)}	V _{DS} =-10V, V _{GS} =-10V	600			mA
Forward Transconductance	g _{FS}	V _{DS} =-10V, I _D =-0.1A		430		mS
Input Capacitance	C _{ISS}	V _{DS} =-25V V _{GS} =0V f=1.0MHz		80		pF
Output Capacitance	C _{OSS}			11		
Reverse Transfer Capacitance	C _{RSS}			4		
Turn-On Delay Time	t _{D(ON)}	V _{DD} =-25V, I _D =-120mA, V _{GS} =-10V, R _{GEN} =6Ω		2.8		ns
Rise Time	t _r			6.5		
Turn-Off Delay Time	t _{D(OFF)}			10		
Fall Time	t _f			7.2		
Diode-Forward Voltage	V _{SD}	V _{GS} =0V, I _D =-200mA		-0.75	-1.4	V

Notes :

- a. Surface Mounted on FR4 Board, t ≤ 10 sec.
- b. Pulse Test : Pulse Width ≤ 300 μs, Duty Cycle ≤ 2%.
- c. Guaranteed by design, not subject to production testing.

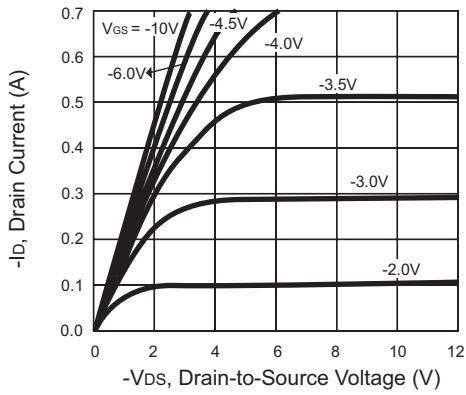


Figure 1. Output Characteristics

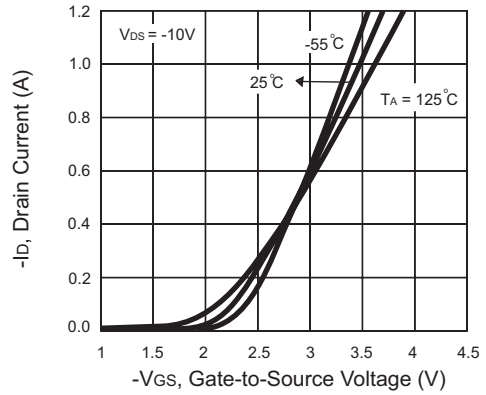


Figure 2. Transfer Characteristics

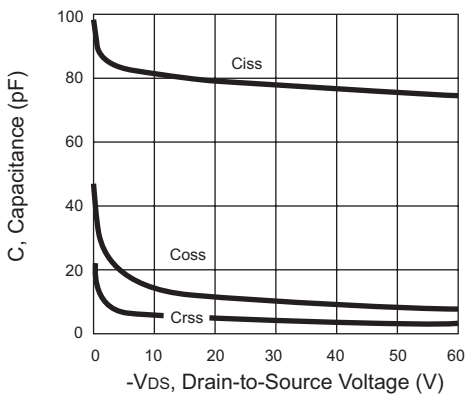


Figure 3. Capacitance

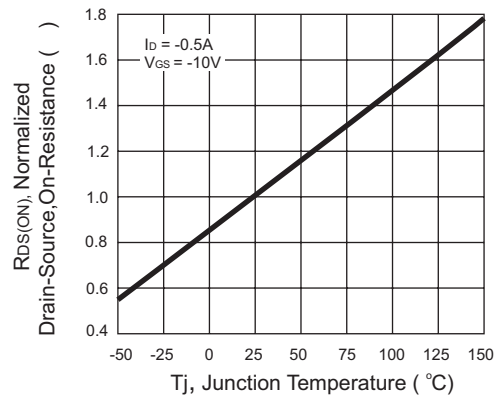


Figure 4. On-Resistance Variation with Temperature

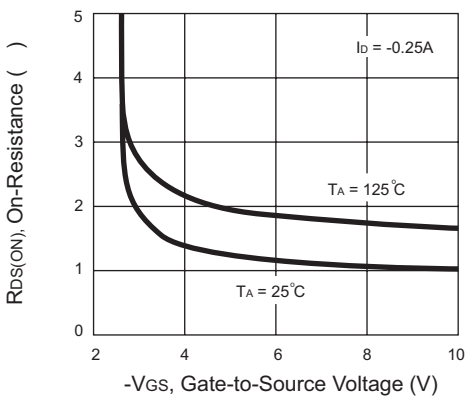


Figure 5. On-Resistance Variation with Gate-to-Source Voltage.

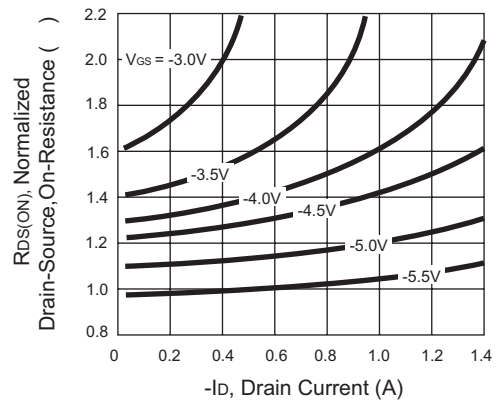


Figure 6. On-Resistance Variation with Drain Current and Gate Voltage.

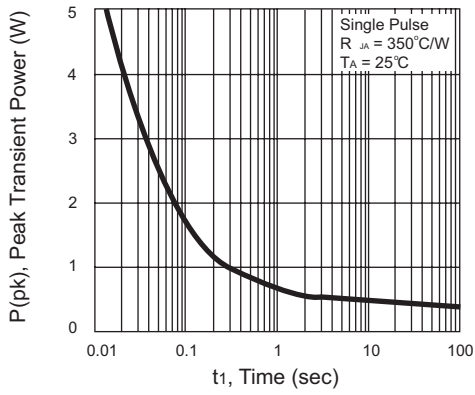


Figure 7. Single Pulse Maximum Power Dissipation

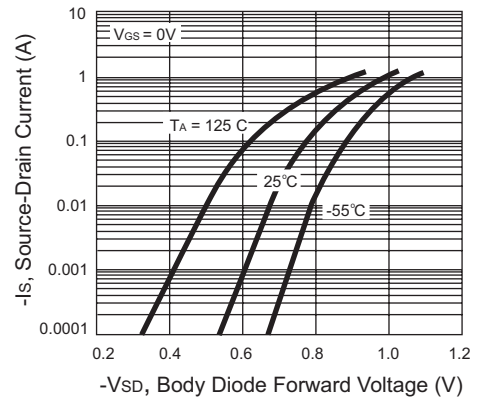


Figure 8. Body Diode Forward Voltage Variation with Source Current

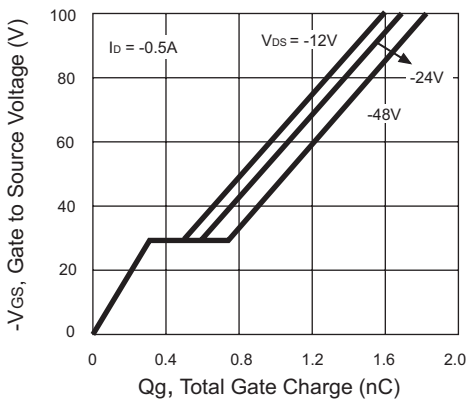


Figure 9. Gate Charge

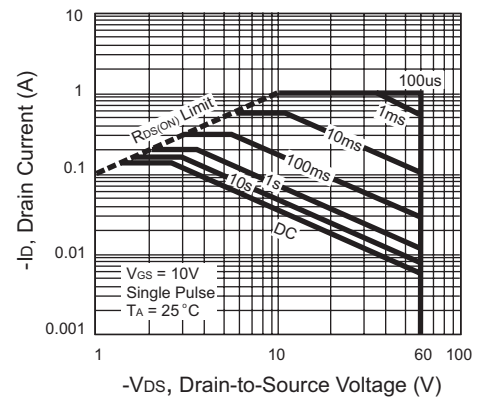


Figure 10. Maximum Safe Operating Area

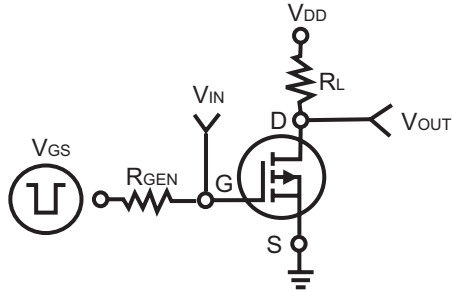


Figure 11. Switching Test Circuit

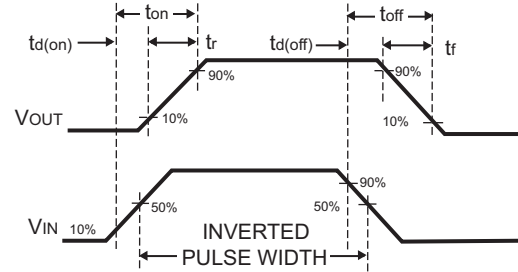


Figure 12. Switching Waveforms

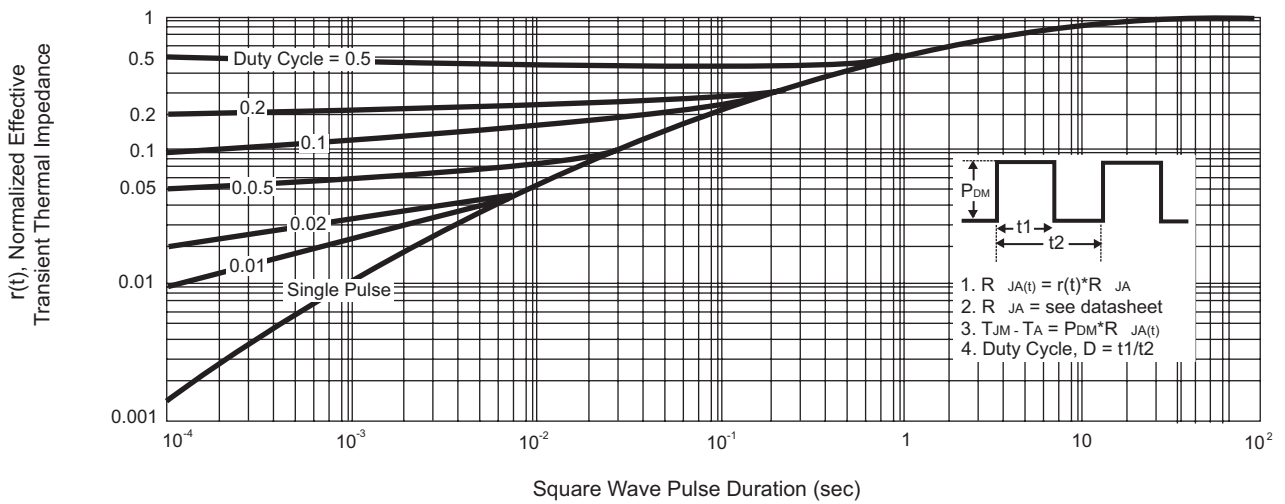


Figure 13. Normalized Thermal Transient Impedance Curve