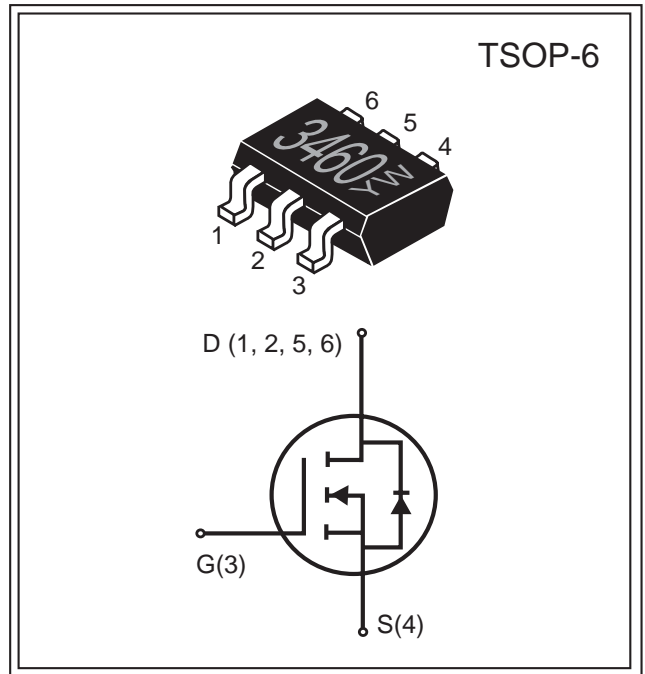




Product Summary		
V _{DS} (V)	I _D (A)	R _{DS(ON)} (mΩ) Max
20V	6A	27 @V _{GS} = 4.5V
		40 @V _{GS} = 2.5V



FEATURES

- Super high dense cell design for low R_{DS(ON)}.
- Rugged and reliable.
- Surface Mount package.
- Pb Free.

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

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V _{DS}	20	V
Gate-Source Voltage	V _{GS}	±8	V
Drain Current-Continuous @ T _J = 25°C	I _D	6	A
-Pulsed ^b	I _{DM}	20	A
Drain-Source Diode Forward Current ^a	I _S	1.7	A
Maximum Power Dissipation ^a	P _D	2.0	W
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55 to 150	°C

THERMAL CHARACTERISTICS

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



Electrical Characteristics (T _A = 25°C unless otherwise noted)						
Parameter	Symbol	Condition	Min	Typ ^c	Max	Unit
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250 μ A	20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =16V, V _{GS} =0V			1	μ A
Gate-Body Leakage	I _{GSS}	V _{GS} = ± 8V, V _{DS} =0V			± 100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =1mA	0.45			V
Drain-Source On-State Resistance	R _{DSON}	V _{GS} =4.5V, I _D =5.1A		23	27	m
		27V _{GS} =2.5V, I _D =4.7A		30	40	
Forward Transconductance	g _{FS}	V _{DS} =10V, I _D =5.1A		25		S
Input Capacitance	C _{ISS}	V _{DS} =8V		1256		pF
Output Capacitance	C _{OSS}	V _{GS} =0V		221		
Reverse Transfer Capacitance	C _{RSS}	f=1.0MHz		108		
Turn-On Delay Time	t _{D(ON)}	V _{DD} =10V, I _D =1A, V _{GEN} =4.5V, R _{GEN} =6 Ω, R _L =10 Ω		15	30	ns
Rise Time	t _r			30	60	
Turn-Off Delay Time	t _{D(OFF)}			70	140	
Fall Time	t _f			30	60	
Total Gate Charge	Q _g	V _{DS} =10V,		13.5	20	nC
Gate-Source Charge	Q _{gs}	I _D =5.1A,		2.3		
Gate-Drain Charge	Q _{gd}	V _{GS} =4.5V		2.2		
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _D =1.7A		0.8	1.2	V

Notes :

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

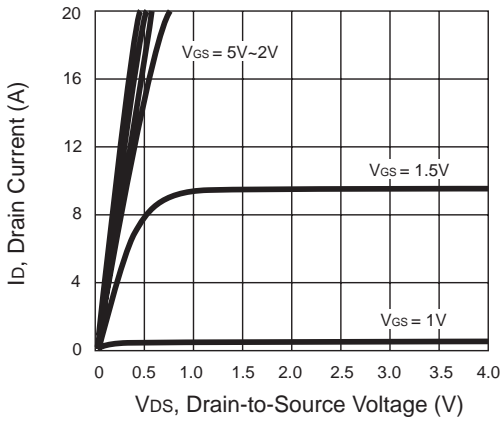


Figure 1. Output Characteristics

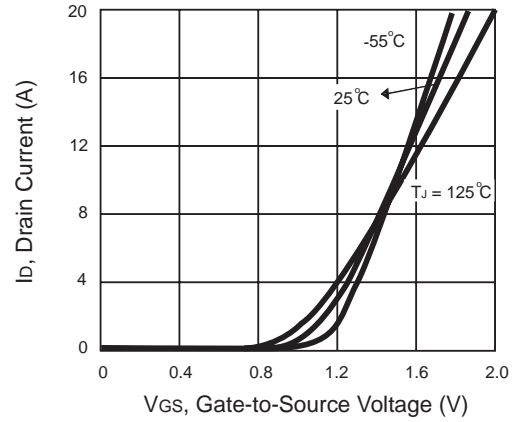


Figure 2. Transfer Characteristics

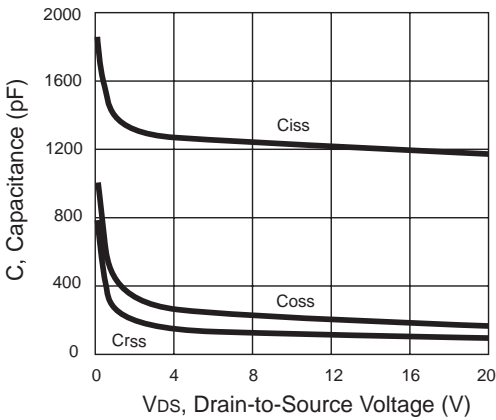


Figure 3. Capacitance

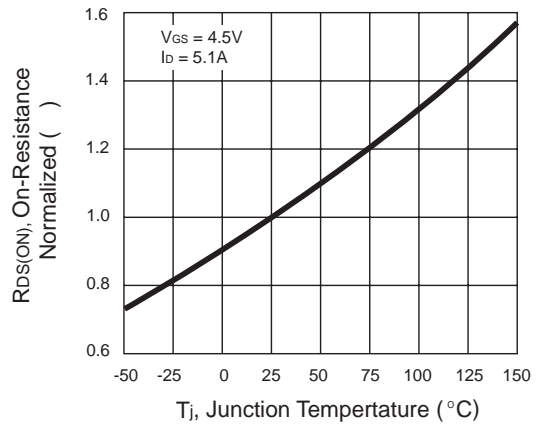


Figure 4. On-Resistance Variation with Temperature

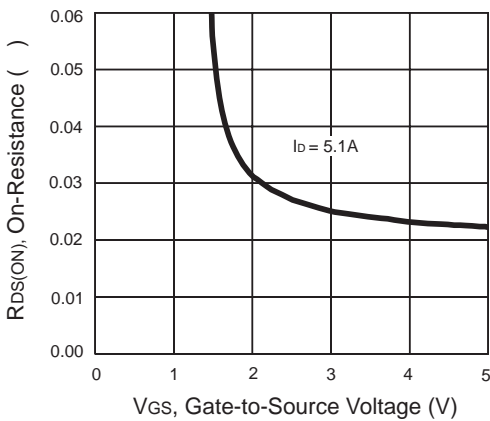


Figure 5. Gate to Source Variation with On-Resistance

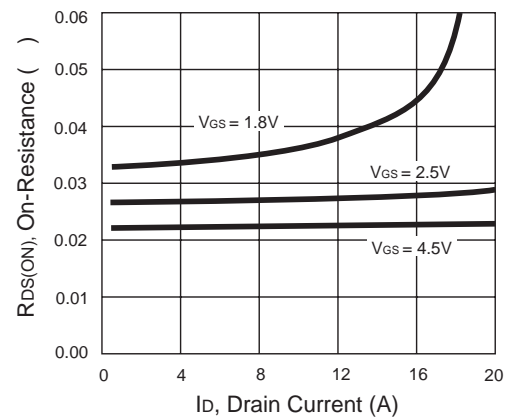


Figure 6. On-Resistance Variation with Drain Current

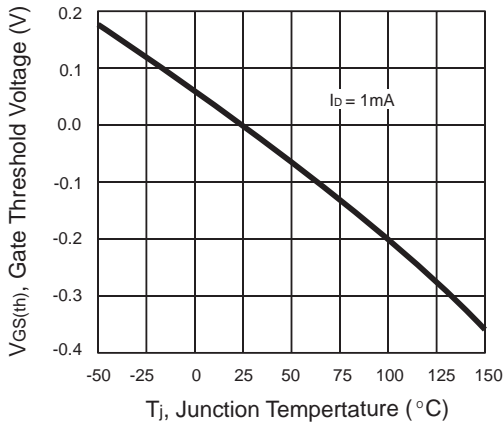


Figure 7. Threshold Voltage Variation with Junction Temperature

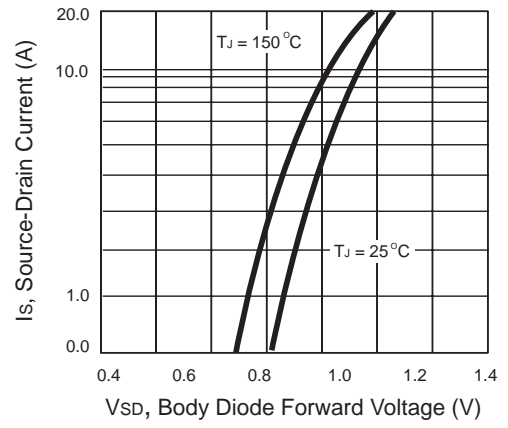


Figure 8. Body Diode Forward Voltage Variation with Source Current

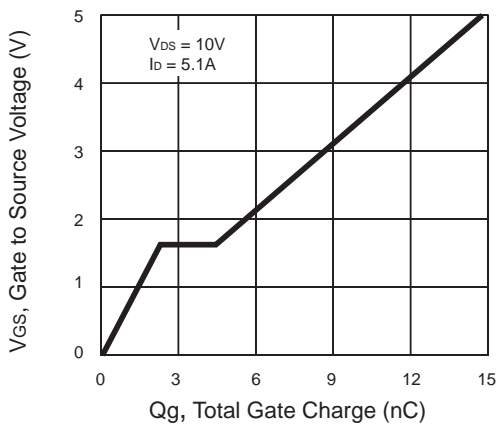


Figure 9. Gate Charge

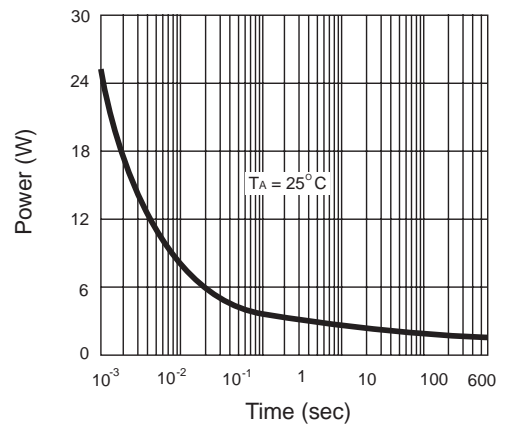


Figure 10. Single Pulse Power

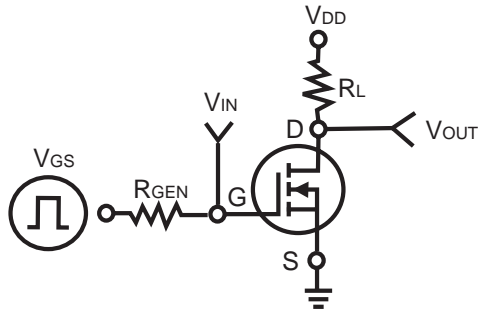


Figure 11. Switching Test Circuit

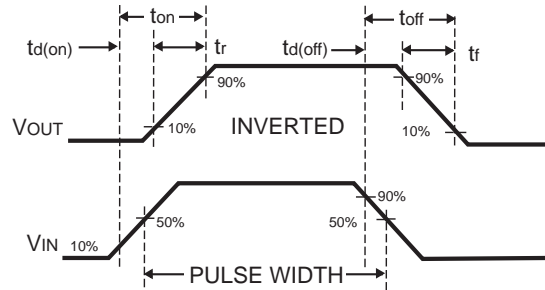


Figure 12. Switching Waveforms

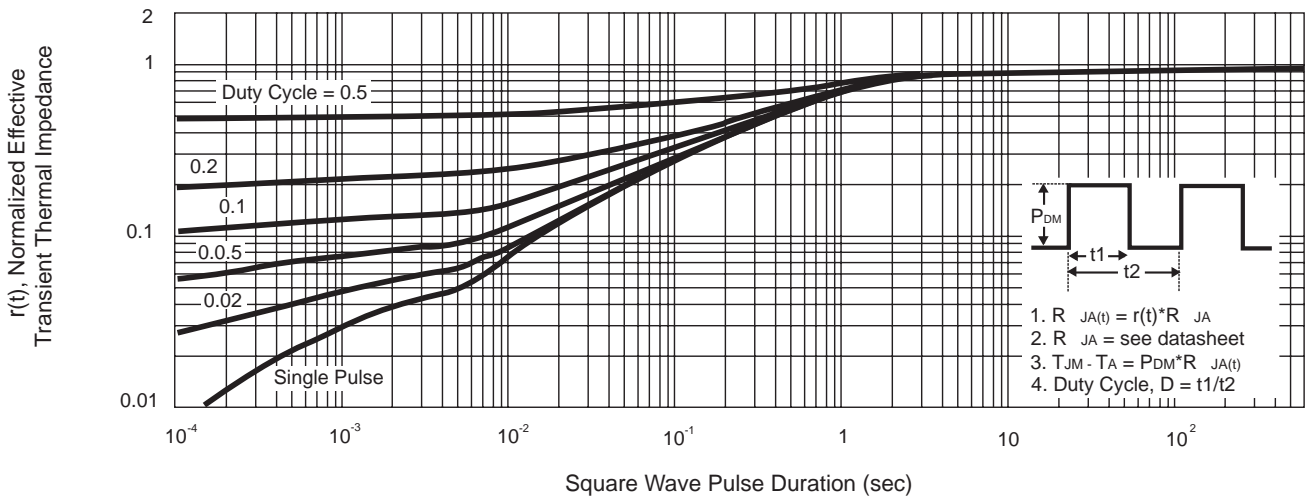


Figure 13. Normalized Thermal Transient Impedance Curve