

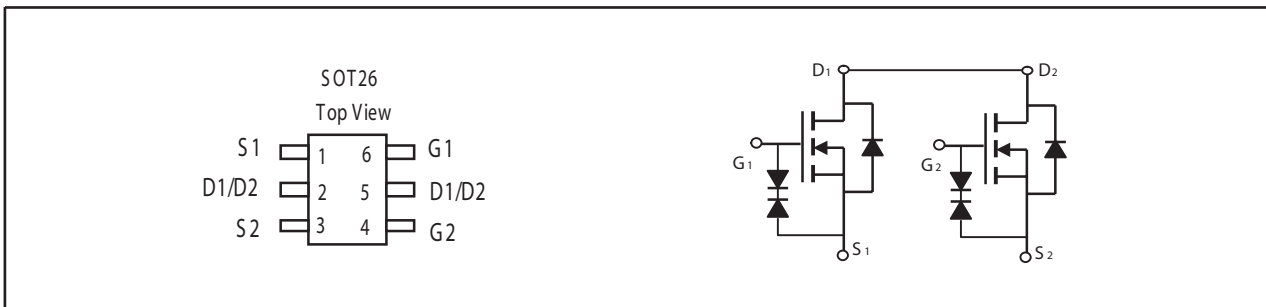


Dual N-Channel Enhancement Mode Field Effect Transistor

PRODUCT SUMMARY		
V _{DS}	I _D	R _{DS(ON)} (mΩ) Max
30V	4.5A	36 @ V _{GS} =4.5V
		46 @ V _{GS} =2.5V

FEATURES

- Super high dense cell design for low R_{DS(ON)}.
- Rugged and reliable.
- Surface Mount Package.
- ESD Protected.



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

Symbol	Parameter	Limit	Units
V _{DS}	Drain-Source Voltage	30	V
V _{GS}	Gate-Source Voltage	±10	V
I _D	Drain Current-Continuous ^a	T _A =25°C	4.5
		T _A =70°C	3.6
I _{DM}	-Pulsed ^b	18	A
P _D	Maximum Power Dissipation ^a	T _A =25°C	1.25
		T _A =70°C	0.8
T _J , T _{STG}	Operating Junction and Storage Temperature Range	-55 to 150	°C

THERMAL CHARACTERISTICS

R _{θJA}	Thermal Resistance, Junction-to-Ambient ^a	100	°C/W
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STS8235

Ver 1.0

ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
OFF CHARACTERISTICS						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V , I _D =250uA	30			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =24V , V _{GS} =0V			1	uA
I _{GSS}	Gate-Body Leakage Current	V _{GS} = ±10V , V _{DS} =0V			±10	uA
ON CHARACTERISTICS						
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250uA	0.5	0.7	1.5	V
R _{DS(ON)}	Drain-Source On-State Resistance	V _{GS} =4.5V , I _D =4.5A		30	36	m ohm
		V _{GS} =2.5V , I _D =4A		36	46	m ohm
g _{FS}	Forward Transconductance	V _{DS} =5V , I _D =4.5A		15		S
DYNAMIC CHARACTERISTICS ^c						
C _{ISS}	Input Capacitance	V _{DS} =15V, V _{GS} =0V f=1.0MHz		440		pF
C _{OSS}	Output Capacitance			80		pF
C _{RSS}	Reverse Transfer Capacitance			56		pF
SWITCHING CHARACTERISTICS ^c						
t _{D(ON)}	Turn-On Delay Time	V _{DD} =15V I _D =1A V _{GS} =4.5V R _{GEN} =10 ohm		10		ns
t _r	Rise Time			12.5		ns
t _{D(OFF)}	Turn-Off Delay Time			15.5		ns
t _f	Fall Time			30		ns
Q _g	Total Gate Charge	V _{DS} =15V, I _D =4.5A, V _{GS} =4.5V		6.7		nC
		V _{DS} =15V, I _D =4.5A, V _{GS} =2.5V		4.6		nC
Q _{gs}	Gate-Source Charge	V _{DS} =15V, I _D =4.5A,		1.5		nC
Q _{gd}	Gate-Drain Charge	V _{GS} =4.5V		2.2		nC
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
I _S	Maximum Continuous Drain-Source Diode Forward Current				1.25	A
V _{SD}	Diode Forward Voltage ^b	V _{GS} =0V, I _S =1.25A		0.78	1.2	V

Notes

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

Aug, 14, 2008

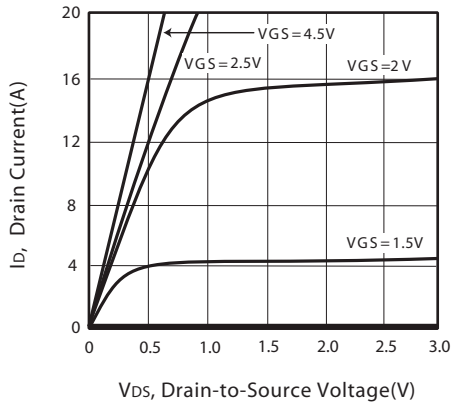


Figure 1. Output Characteristics

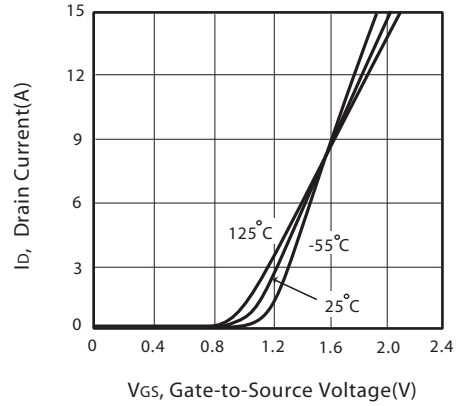


Figure 2. Transfer Characteristics

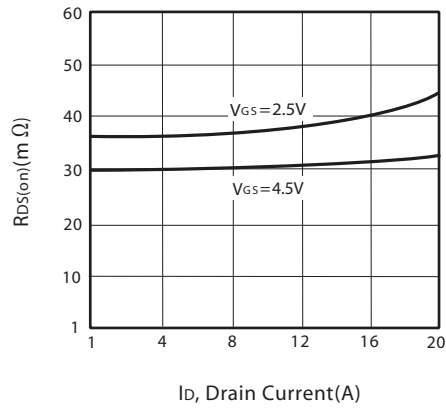


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

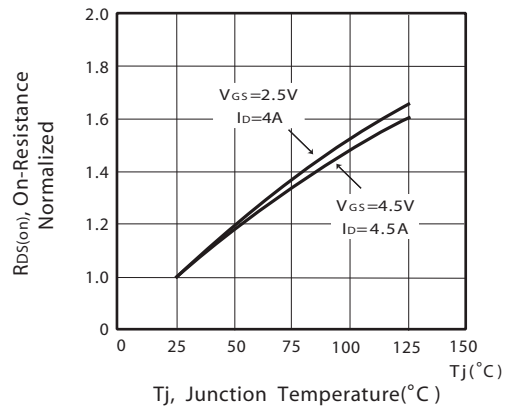


Figure 4. On-Resistance Variation with Drain Current and Temperature

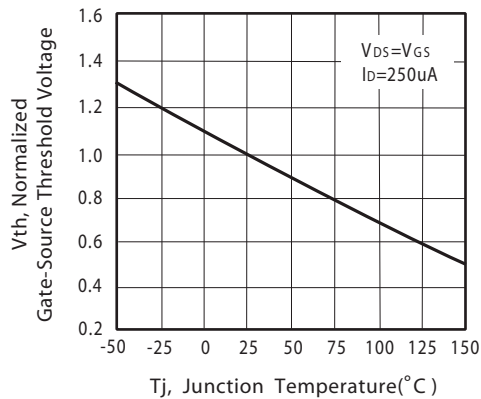


Figure 5. Gate Threshold Variation with Temperature

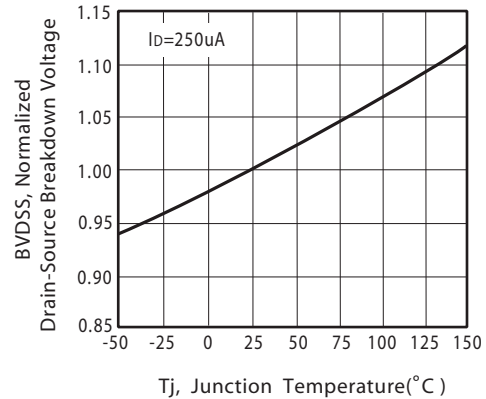


Figure 6. Breakdown Voltage Variation with Temperature

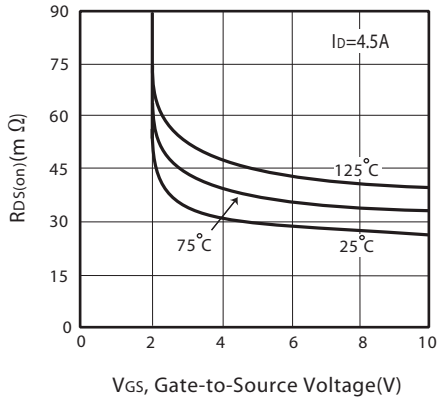


Figure 7. On-Resistance vs. Gate-Source Voltage

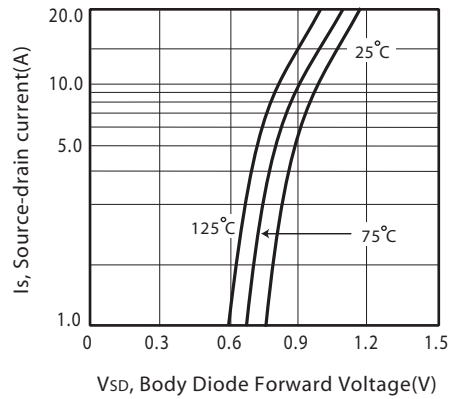


Figure 8. Body Diode Forward Voltage Variation with Source Current

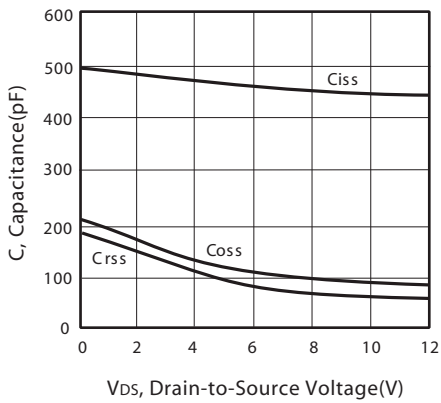


Figure 9. Capacitance

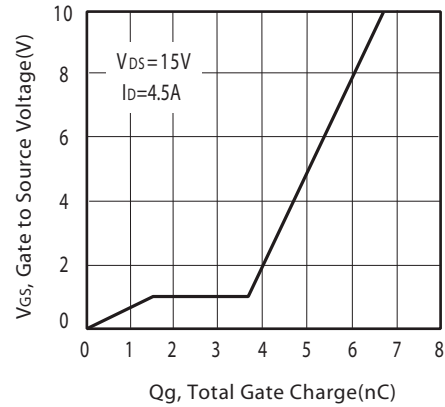


Figure 10. Gate Charge

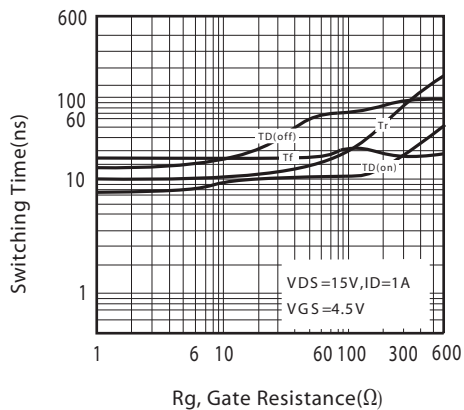


Figure 11. switching characteristics

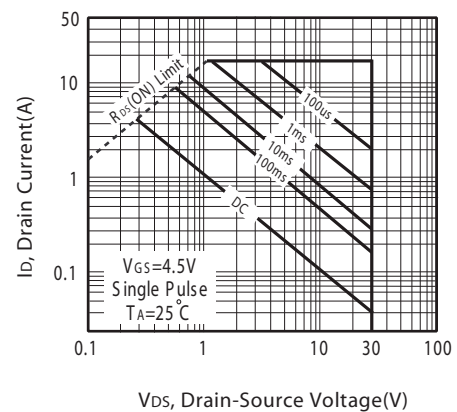


Figure 12. Maximum Safe Operating Area

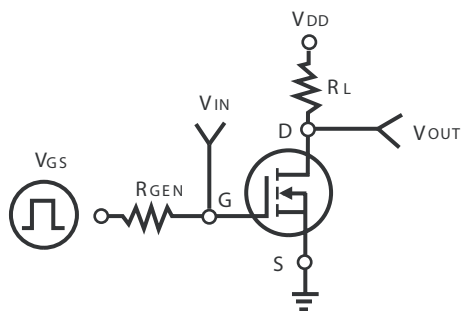


Figure 13. Switching Test Circuit

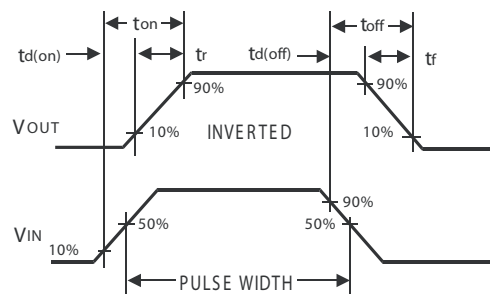


Figure 14. Switching Waveforms

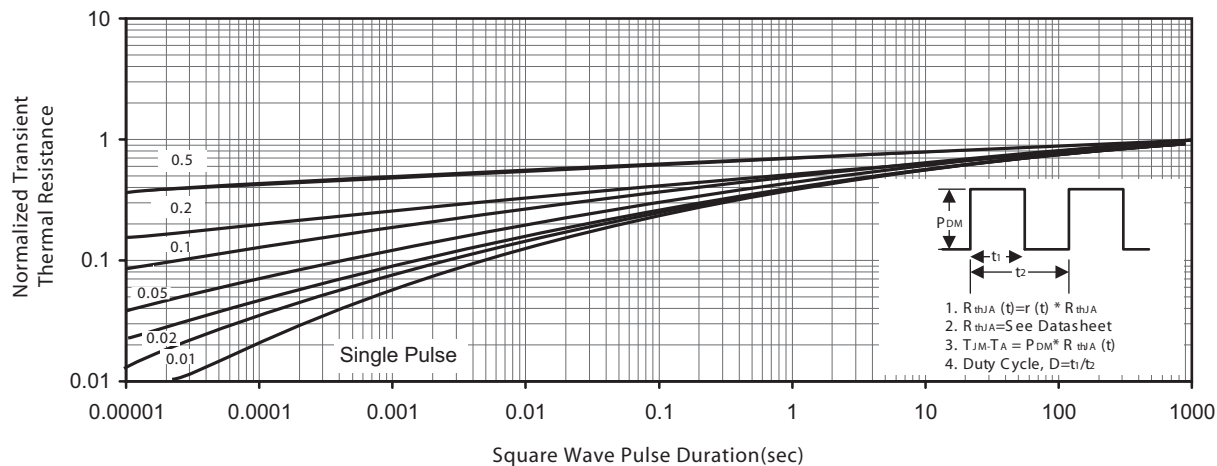


Figure 15. Normalized Thermal Transient Impedance Curve

PACKAGE OUTLINE DIMENSIONS

