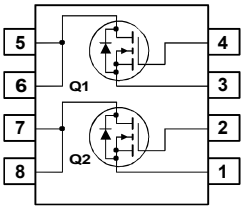
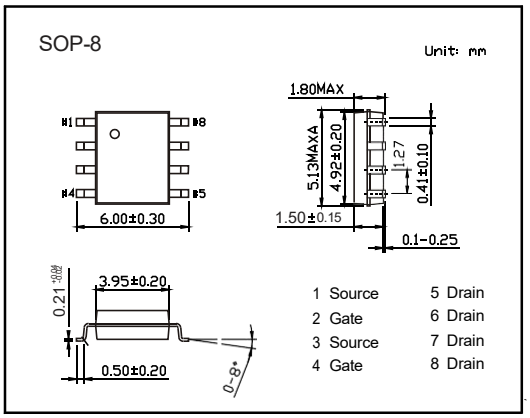
■ Features

- V_{DS} (V) = 20V
- I_D = 6.5 A (V_{GS} = 4.5V)
- $R_{DS(ON)}$ < 30mΩ (V_{GS} = 4.5V)
- $R_{DS(ON)}$ < 43mΩ (V_{GS} = 2.5V)
- Low gate charge
- Pb−Free Package May be Available. The G−Suffix Denotes a Pb−Free Lead Finish





■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±12	
Continuous Drain Current (Note.1)	I_D	6.5	A
Pulsed Drain Current	I_{DM}	20	
Power Dissipation for Dual Operation	P_D	2	W
Power Dissipation for Single Operation (Note.1)		1.6	
(Note.2)		1	
(Note.3)		0.9	
Thermal Resistance.Junction- to-Ambient (Note.1)	R_{thJA}	78	℃/W
Thermal Resistance.Junction- to-Case	R_{thJC}	40	
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

Note.1: 78°/W when mounted on a 0.5in² pad of 2 oz copper

Note.2: 125°/W when mounted on a 0.02 in² pad of 2 oz copper

Note.3: 135°/W when mounted on a minimum pad.

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=250μA, V_{GS}=0V	20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=16V, V_{GS}=0V			1	μA
Gate-Body Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±12V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} , I_D=250μA (Note.1)	0.5		1.5	V
Static Drain-Source On-Resistance (Note.1)	$R_{DS(ON)}$	V_{GS}=4.5V, I_D=6.5A			30	mΩ
		V_{GS}=4.5V, I_D=6.5A T_J=125℃			50	
		V_{GS}=2.5V, I_D=5.4A			43	
On State Drain Current	$I_{D(ON)}$	V_{GS}=4.5V, V_{DS}=5V (Note.1)	15			A
Forward Transconductance	g_{FS}	V_{DS}=5V, I_D=3A (Note.1)		11		S
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=10V, f=1MHz		700		pF
Output Capacitance	C_{oss}			175		
Reverse Transfer Capacitance	C_{rss}			85		
Total Gate Charge	Q_g	V_{GS}=4.5V, V_{DS}=10V, I_D=3A (Note.1)		7	10	nC
Gate Source Charge	Q_{gs}			1.2		
Gate Drain Charge	Q_{gd}			1.9		
Turn-On DelayTime	$t_{d(on)}$	V_{GS}=4.5V, V_{DS}=100V, I_D=1A,R_G=6Ω (Note.1)		8	16	ns
Turn-On Rise Time	t_r			10	18	
Turn-Off DelayTime	$t_{d(off)}$			18	29	
Turn-Off Fall Time	t_f			5	10	
Maximum Body-Diode Continuous Current	I_S				1.3	A
Diode Forward Voltage	V_{SD}	I_S=1.3A,V_{GS}=0V (Note.1)			1.2	V

Note.1: Pulse Test: Pulse Width < 300us, Duty Cycle < 2.0%

■ Typical Characterisitics

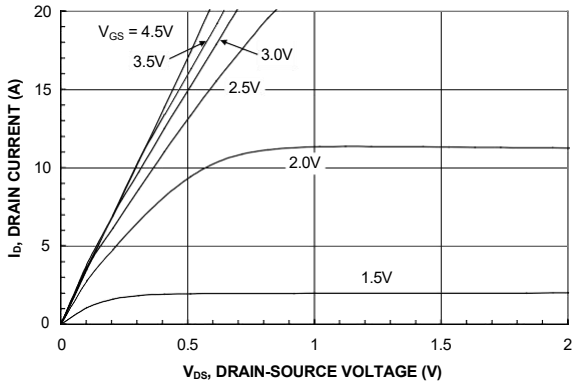


Figure 1. On-Region Characteristics.

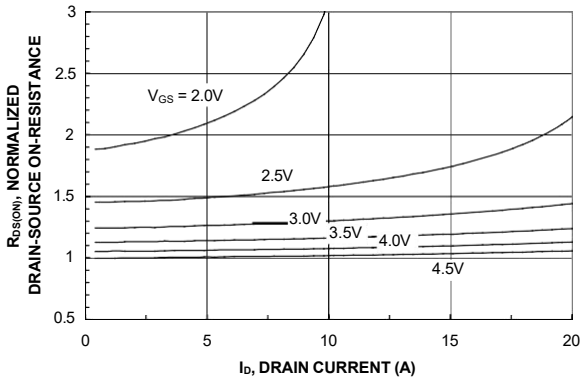


Figure 2. On-Resistance Variation with Drain Current and Gate Voltage.

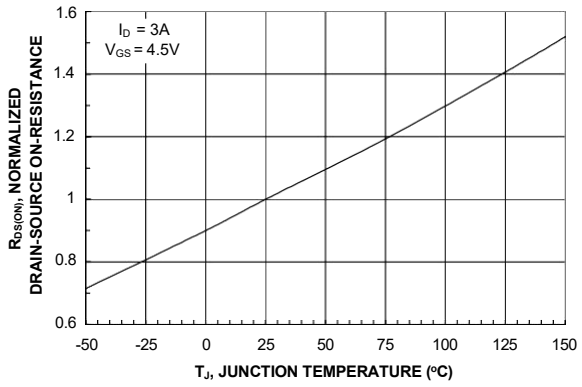


Figure 3. On-Resistance Variation with Temperature.

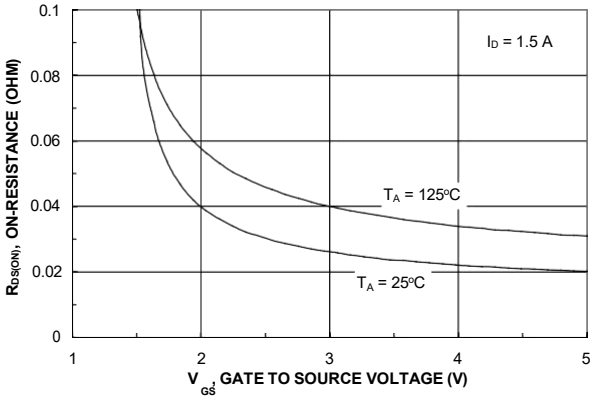


Figure 4. On-Resistance Variation with Gate-to-Source Voltage.

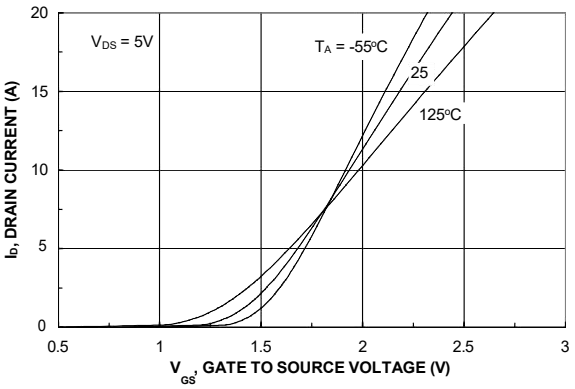


Figure 5. Transfer Characteristics.

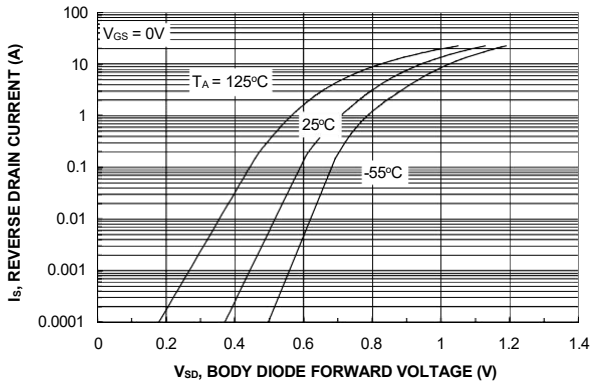


Figure 6. Body Diode Forward Voltage Variation with Source Current and Temperature.

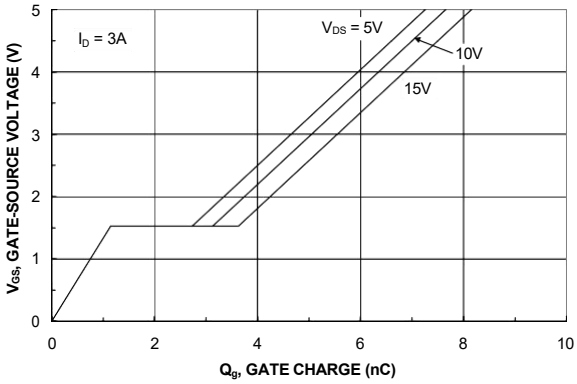


Figure 7. Gate Charge Characteristics.

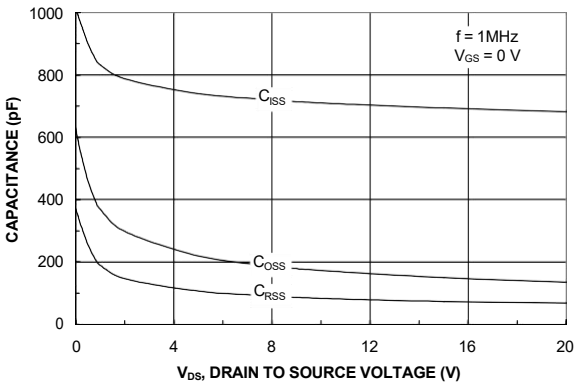


Figure 8. Capacitance Characteristics.

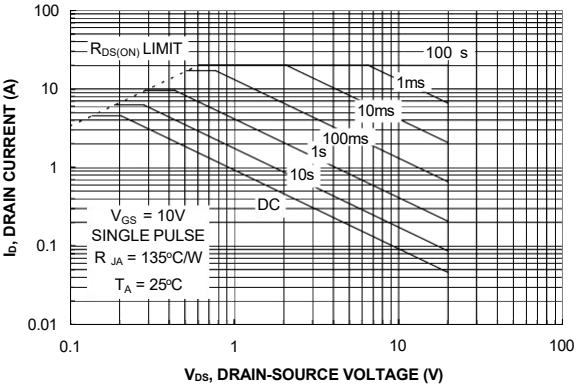


Figure 9. Maximum Safe Operating Area.

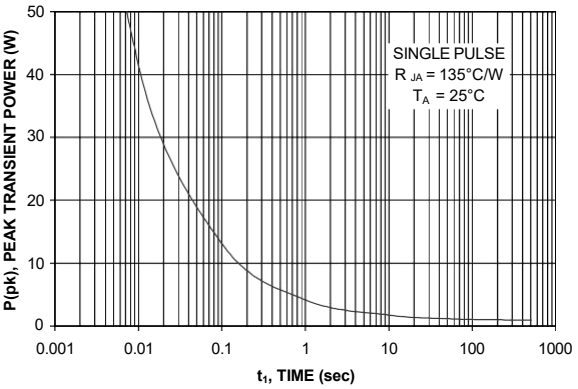


Figure 10. Single Pulse Maximum Power Dissipation.

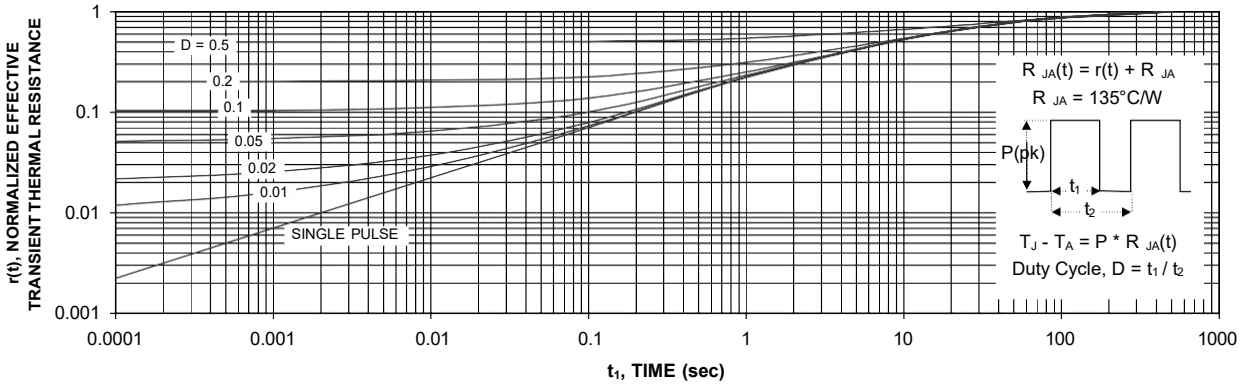


Figure 11. Transient Thermal Response Curve.

Thermal characterization performed using the conditions described in Note 1c.
Transient thermal response will change depending on the circuit board design.