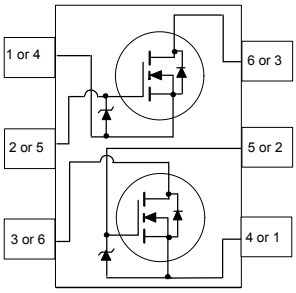
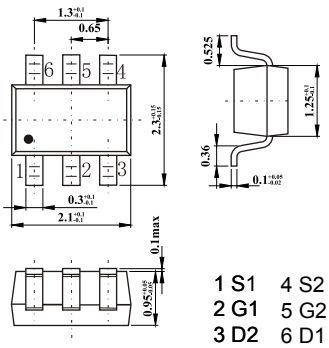
■ Features

- $V_{DS\,(V)}$ = 25V
- I_D = 220m A (V_{GS} = 4.5V)
- $R_{DS(ON)}$ ＜ 4Ω (V_{GS} = 4.5V)
- $R_{DS(ON)}$ ＜ 5Ω (V_{GS} = 2.7V)
- Gate-Source Zener for ESD ruggedness (>6kV Human Body Model).



SOT-363 Unit: mm



■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	25	V
Gate-Source Voltage		V_{GS}	±8	
Continuous Drain Current	Continuous	I_D	220	mA
	Pulsed		650	
Electrostatic Discharge Rating MIL-STD-883D Human Body Model(100 pF / 1500 W)		ESD	6	KV
Power Dissipation		P_D	300	mW
Thermal Resistance.Junction- to-Ambient		R_{thJA}	415	℃/W
Junction Temperature		T_J	150	℃
Storage Temperature Range		T_{stg}	-55 to 150	

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=250μA, V_{GS}=0V	25			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V, V_{GS}=0V			1	μA
		V_{DS}=20V, V_{GS}=0V, T_J=55℃			10	
Gate-Body Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±8V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} , I_D=250μA	0.65	0.85	1.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=4.5V, I_D=220mA		2.6	4	Ω
		V_{GS}=4.5V, I_D=220mA T_J=125℃		5.3	7	
		V_{GS}=2.7V, I_D=190mA		3.7	5	
On State Drain Current	$I_{D(ON)}$	V_{GS}=4.5V, V_{DS}=5V	0.22			A
Forward Transconductance	g_{FS}	V_{DS}=5V, I_D=220mA		0.2		S
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=10V, f=1MHz		9.5		pF
Output Capacitance	C_{oss}			6		
Reverse Transfer Capacitance	C_{rss}			1.3		
Total Gate Charge	Q_g	V_{GS}=4.5V, V_{DS}=5V, I_D=220mA		0.29	0.4	nC
Gate Source Charge	Q_{gs}			0.12		
Gate Drain Charge	Q_{gd}			0.03		
Turn-On DelayTime	$t_{d(on)}$	V_{GS}=4.5V, V_{DS}=5V,I_D=500mA,R_G=50Ω		5	10	ns
Turn-On Rise Time	t_r			4.5	10	
Turn-Off DelayTime	$t_{d(off)}$			4	8	
Turn-Off Fall Time	t_f			3.2	7	
Maximum Body-Diode Continuous Current	I_S				0.25	A
Diode Forward Voltage	V_{SD}	I_S=250mA,V_{GS}=0V (Note.1)		0.8	1.2	V

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

■ Typical Characterisitics

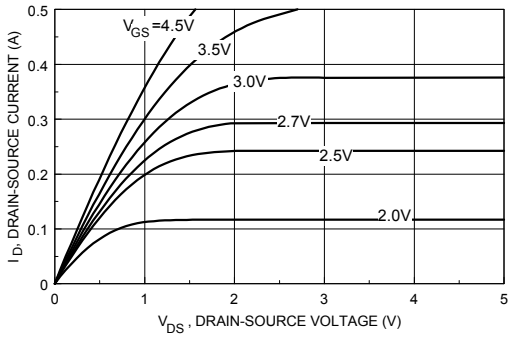


Figure 1. On-Region Characteristics.

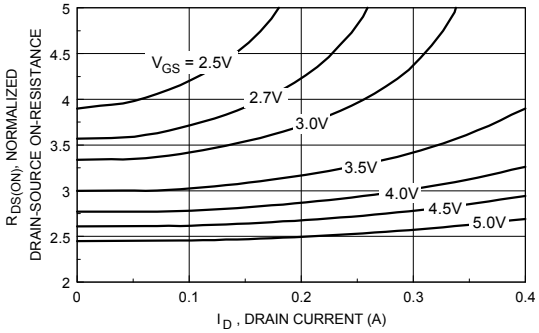


Figure 2. On-Resistance Variation with Drain Current and Gate Voltage.

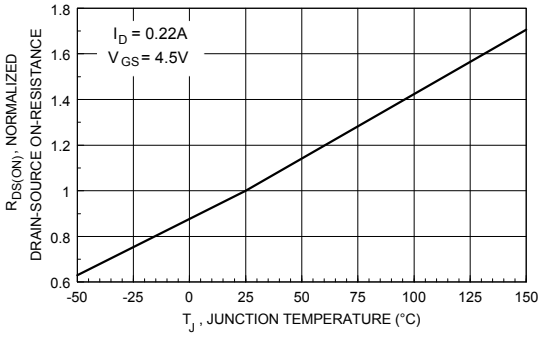


Figure 3. On-Resistance Variation with Temperature .

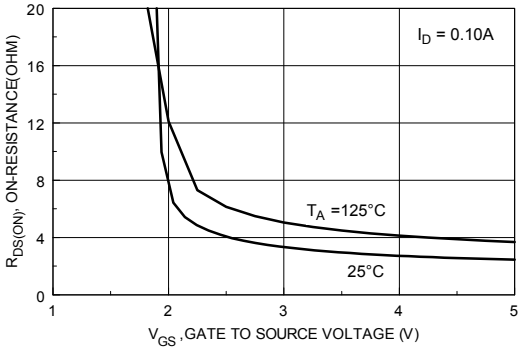


Figure 4. On-Resistance Variation with Gate-t o-Source Voltage.

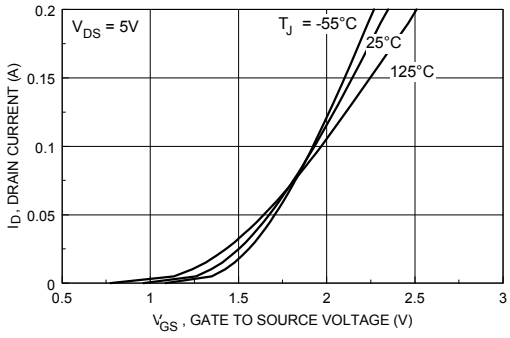


Figure 5 . Transfer Characteristics.

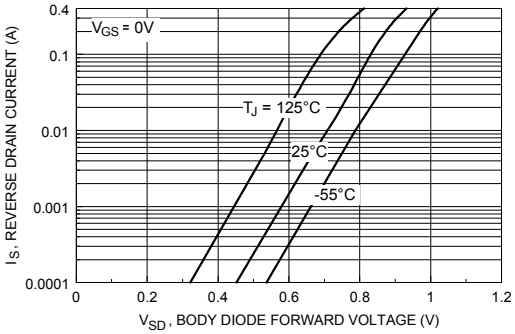


Figure 6. Body Diode Forward Voltage Varia tion with Source Current and Temperature.

■ Typical Characterisitics

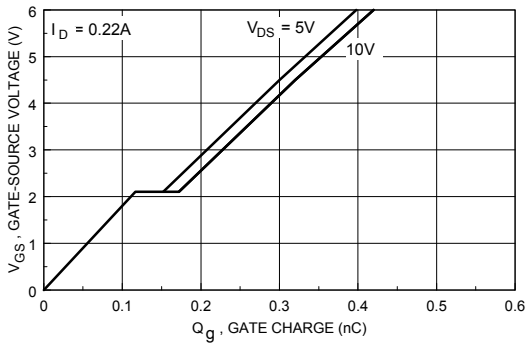


Figure 7. Gate Charge Characteristics.

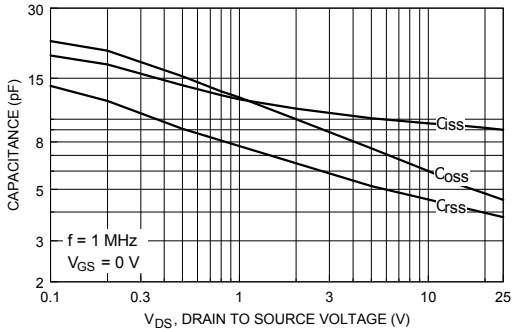


Figure 8. Capacitance Characteristics .

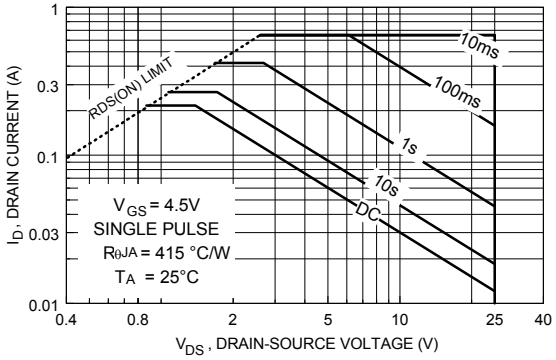


Figure 9. Maximum Safe Operating Area.

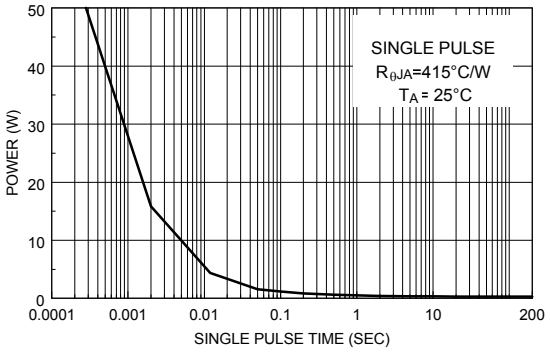


Figure 10 . Single Pulse Maximum Power Dissipation.

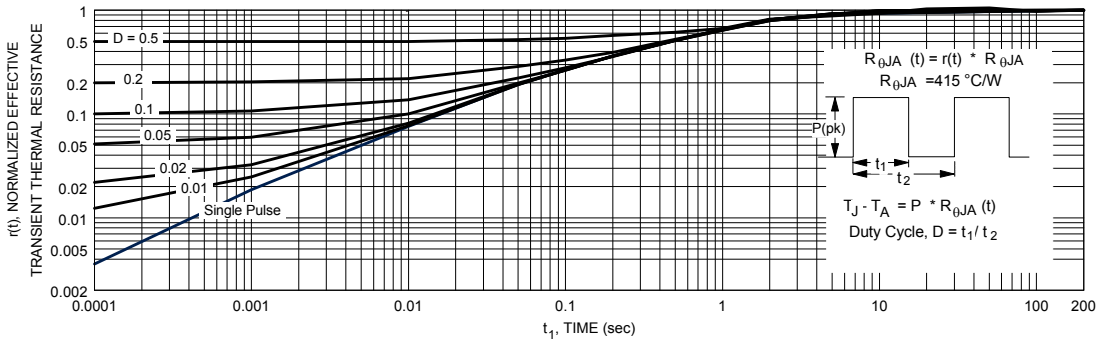


Figure 11 . Transient Thermal Response Curve .

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