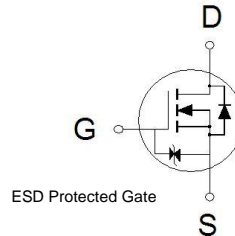




**PRODUCT SUMMARY**

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
30V	35mΩ	4.3A

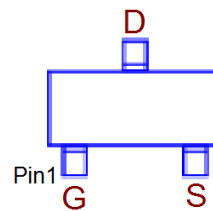


**Features**

- Pb-Free, Halogen Free and RoHS compliant.
- Low  $R_{DS(on)}$  to Minimize Conduction Losses.
- Ohmic Region Good  $R_{DS(on)}$  Ratio.
- Optimized Gate Charge to Minimize Switching Losses.
- ESD Protection – HBM Class : 1C

**Applications**

- Protection Circuits Applications.
- Logic/Load Switch Circuits Applications.



G. GATE  
D. DRAIN  
S. SOURCE

**ABSOLUTE MAXIMUM RATINGS ( $T_A = 25\text{ °C}$  Unless Otherwise Noted)**

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		$V_{DS}$	30	V
Gate-Source Voltage		$V_{GS}$	±20	V
Continuous Drain Current	$T_C = 25\text{ °C}$	$I_D$	4.3	A
	$T_C = 70\text{ °C}$		3.5	
Pulsed Drain Current <sup>1</sup>		$I_{DM}$	16	
Power Dissipation	$T_A = 25\text{ °C}$	$P_D$	1.3	W
	$T_A = 70\text{ °C}$		0.8	
Operating Junction & Storage Temperature Range		$T_j, T_{stg}$	-55 to 150	°C

**THERMAL RESISTANCE RATINGS**

THERMAL RESISTANCE		SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient <sup>2</sup>	$t \leq 10s$	$R_{\theta JA}$		100	°C / W
Junction-to-Ambient <sup>2</sup>	Steady-State	$R_{\theta JA}$		145	

<sup>1</sup>Pulse width limited by maximum junction temperature.

<sup>2</sup>The value of  $R_{\theta JA}$  is measured with the device mounted on 1in<sup>2</sup> FR-4 board with 2oz. Copper, in a still air environment with  $T_A = 25\text{ °C}$ .

<sup>3</sup>The Power dissipation is based on  $R_{\theta JA} t \leq 10s$  value.

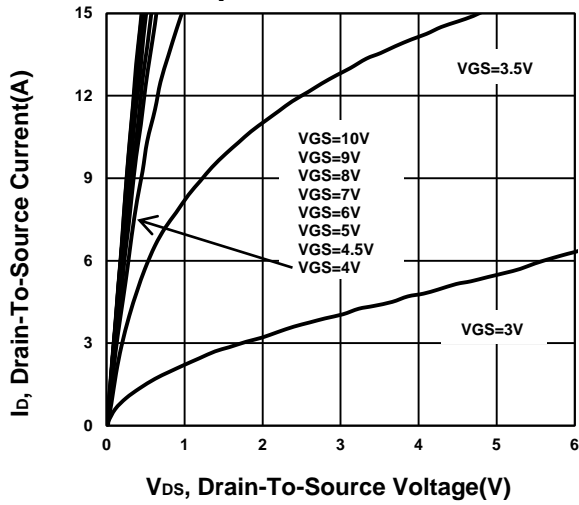
**ELECTRICAL CHARACTERISTICS (T<sub>J</sub> = 25 °C, Unless Otherwise Noted)**

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT		
			MIN	TYP	MAX			
<b>STATIC</b>								
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	30			V		
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	1.3	1.7	2.3			
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0V, V <sub>GS</sub> = ±16V			30	μA		
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 30V, V <sub>GS</sub> = 0V			1	μA		
		V <sub>DS</sub> = 30V, V <sub>GS</sub> = 0V, T <sub>J</sub> = 55 °C			10			
Drain-Source On-State Resistance <sup>1</sup>	R <sub>DSON</sub>	V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 0.5A		36	60	mΩ		
		V <sub>GS</sub> = 10V, I <sub>D</sub> = 0.5 A		26	35			
Forward Transconductance <sup>1</sup>	g <sub>fs</sub>	V <sub>DS</sub> = 5V, I <sub>D</sub> = 0.5A		3.1		S		
<b>DYNAMIC</b>								
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> = 0V, V <sub>DS</sub> = 15V, f = 1MHz		250		pF		
Output Capacitance	C <sub>oss</sub>			49				
Reverse Transfer Capacitance	C <sub>rss</sub>			38				
Total Gate Charge <sup>2</sup>	Q <sub>g(VGS=10V)</sub>	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 10V, I <sub>D</sub> = 1A		6.4		nC		
	Q <sub>g(VGS=4.5V)</sub>			3.6				
Gate-Source Charge <sup>2</sup>	Q <sub>gs</sub>			0.8				
Gate-Drain Charge <sup>2</sup>	Q <sub>gd</sub>			1.7				
Turn-On Delay Time <sup>2</sup>	t <sub>d(on)</sub>		V <sub>DS</sub> = 15V, I <sub>D</sub> ≅ 1A, V <sub>GS</sub> = 10V, R <sub>GEN</sub> = 6Ω		5.4			nS
Rise Time <sup>2</sup>	t <sub>r</sub>				3.6			
Turn-Off Delay Time <sup>2</sup>	t <sub>d(off)</sub>			12				
Fall Time <sup>2</sup>	t <sub>f</sub>			8.8				
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T<sub>J</sub> = 25 °C)</b>								
Continuous Current	I <sub>S</sub>				1	A		
Forward Voltage <sup>1</sup>	V <sub>SD</sub>	I <sub>F</sub> = 0.5A, V <sub>GS</sub> = 0V			1.2	V		
Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 1A, dI <sub>F</sub> /dt = 100A / μS		8		nS		
Reverse Recovery Charge	Q <sub>rr</sub>			3.8		nC		

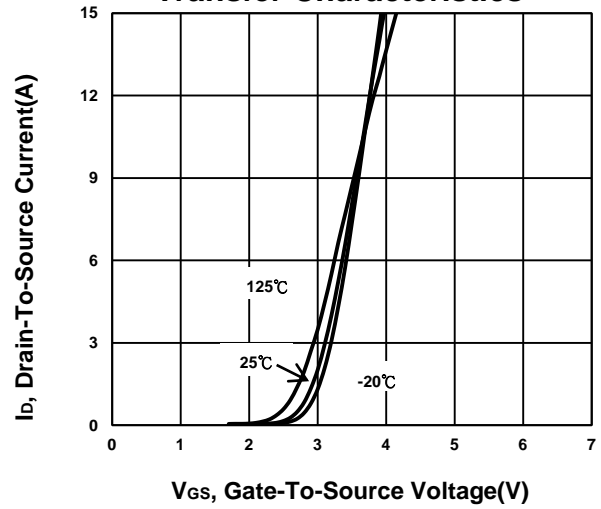
<sup>1</sup>Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

<sup>2</sup>Independent of operating temperature.

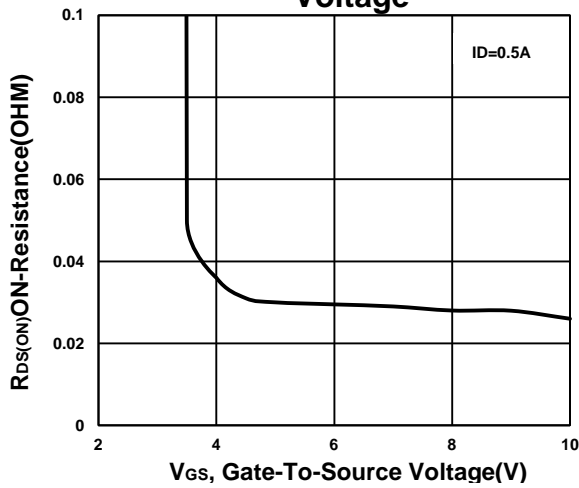
**Output Characteristics**



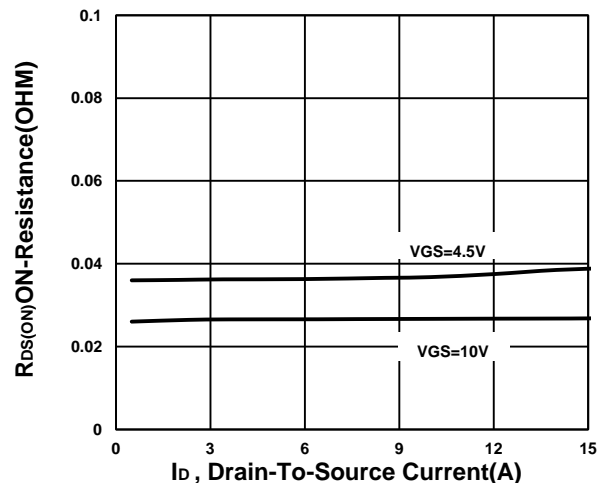
**Transfer Characteristics**



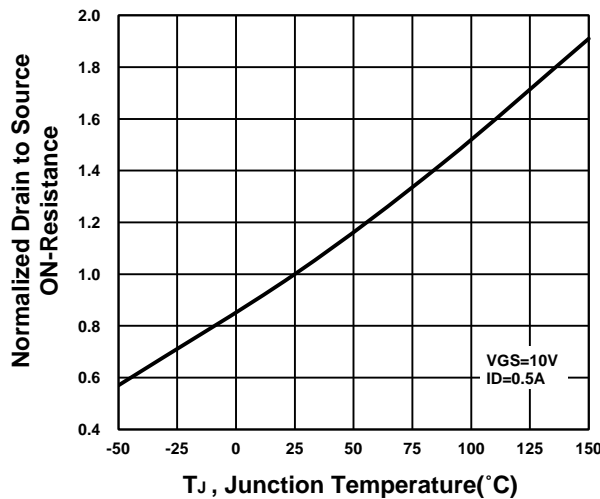
**On-Resistance VS Gate-To-Source Voltage**



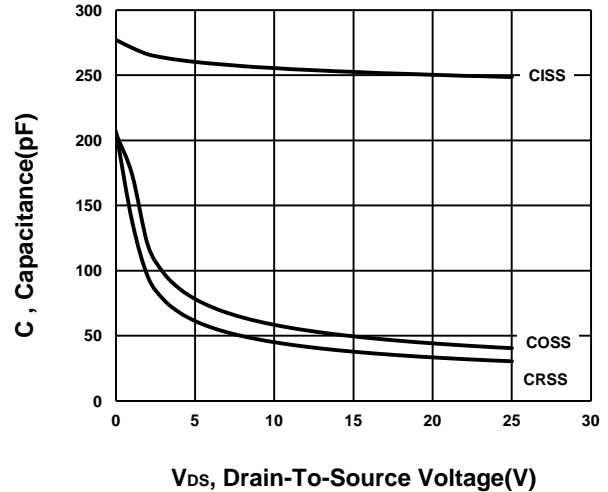
**On-Resistance VS Drain Current**



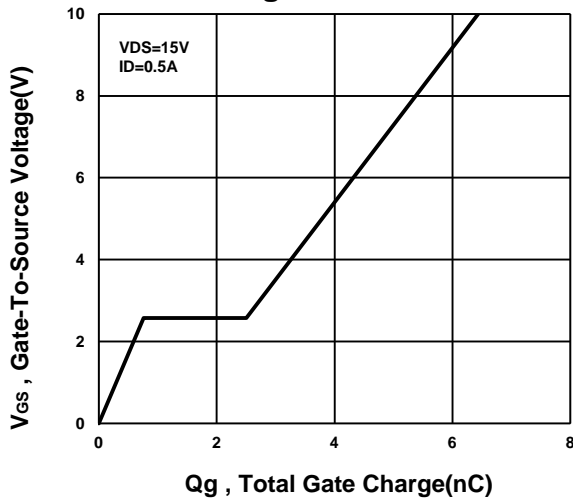
**On-Resistance VS Temperature**



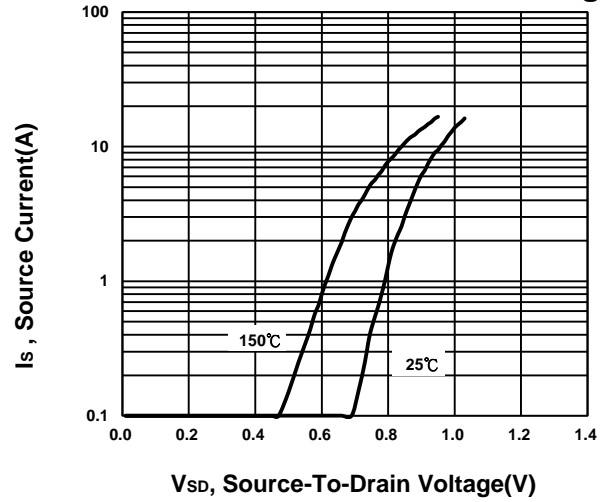
**Capacitance Characteristic**



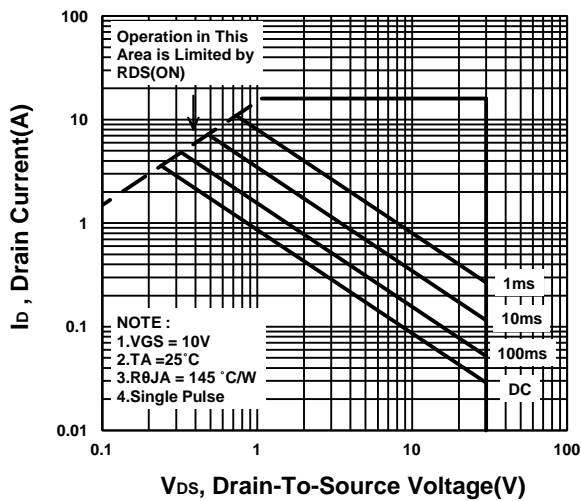
**Gate charge Characteristics**



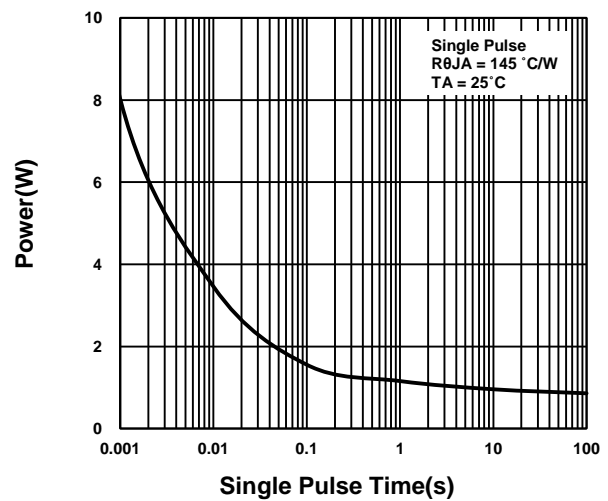
**Source-Drain Diode Forward Voltage**



**Safe Operating Area**



**Single Pulse Maximum Power Dissipation**



**Transient Thermal Response Curve**

