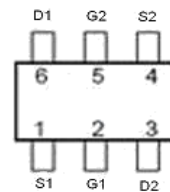
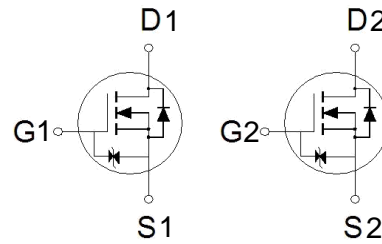




**PRODUCT SUMMARY**

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
20V	300m $\Omega$	0.78A



G: GATE  
D: DRAIN  
S: SOURCE

**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.
- Space Limit & Smart Devices Applications.

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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		$V_{GS}$	$\pm 10$	V
Continuous Drain Current <sup>1</sup>	$T_A = 25\text{ }^\circ\text{C}$	$I_D$	0.78	A
	$T_A = 70\text{ }^\circ\text{C}$		0.62	
Pulsed Drain Current <sup>2</sup>		$I_{DM}$	2.4	A
Power Dissipation	$T_A = 25\text{ }^\circ\text{C}$	$P_D$	0.31	W
	$T_A = 70\text{ }^\circ\text{C}$		0.2	
Operating Junction & Storage Temperature Range		$T_j, T_{stg}$	-55 to 150	$^\circ\text{C}$

**THERMAL RESISTANCE RATINGS**

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient	$R_{\theta JA}$		400	$^\circ\text{C} / \text{W}$

<sup>1</sup>Limited by maximum junction temperature.

<sup>2</sup>Limited by package.

**ELECTRICAL CHARACTERISTICS ( $T_j = 25\text{ }^\circ\text{C}$ , Unless Otherwise Noted)**

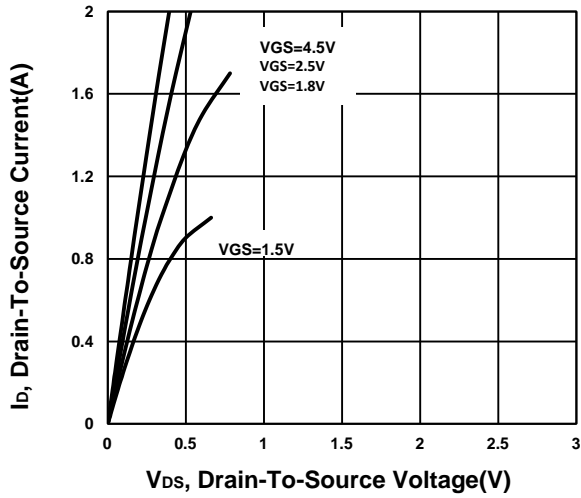
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
<b>STATIC</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{V}, I_D = 250\mu\text{A}$	20			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	0.4	0.63	1	

Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 4.5V$			$\pm 1$	$\mu A$
		$V_{DS} = 0V, V_{GS} = \pm 8V$			$\pm 30$	
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 16V, V_{GS} = 0V$			1	$\mu A$
		$V_{DS} = 10V, V_{GS} = 0V, T_J = 125\text{ }^\circ C$			10	
Drain-Source On-State Resistance <sup>1</sup>	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 0.5A$		177	300	$m\Omega$
		$V_{GS} = 2.5V, I_D = 0.25A$		226	400	
		$V_{GS} = 1.8V, I_D = 0.2A$		300	700	
Forward Transconductance <sup>1</sup>	$g_{fs}$	$V_{DS} = 5V, I_D = 0.5A$		5		S
<b>DYNAMIC</b>						
Input Capacitance	$C_{iss}$	$V_{GS} = 0V, V_{DS} = 10V, f = 1MHz$		60		$pF$
Output Capacitance	$C_{oss}$			19		
Reverse Transfer Capacitance	$C_{rss}$			10		
Total Gate Charge <sup>2</sup>	$Q_g$	$V_{GS} = 4.5V,$ $V_{DS} = 20V, I_D = 1A$		1.1		$nC$
Gate-Source Charge <sup>2</sup>	$Q_{gs}$			0.2		
Gate-Drain Charge <sup>2</sup>	$Q_{gd}$			0.3		
Turn-On Delay Time <sup>2</sup>	$t_{d(on)}$	$V_{DD} = 10V, I_D \cong 0.5A,$ $V_{GS} = 4.5V, R_{GEN} = 5.1\Omega$		17		$nS$
Rise Time <sup>2</sup>	$t_r$			36		
Turn-Off Delay Time <sup>2</sup>	$t_{d(off)}$			86		
Fall Time <sup>2</sup>	$t_f$			173		
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (<math>T_J = 25\text{ }^\circ C</math>)</b>						
Continuous Current	$I_S$				0.25	A
Forward Voltage <sup>1</sup>	$V_{SD}$	$I_F = 0.5A, V_{GS} = 0V$			1.2	V
Reverse Recovery Time	$t_{rr}$	$I_F = 1A, dI/dt = 100 A/\mu s$		111		$nS$
Reverse Recovery Charge	$Q_{rr}$			102		$\mu C$

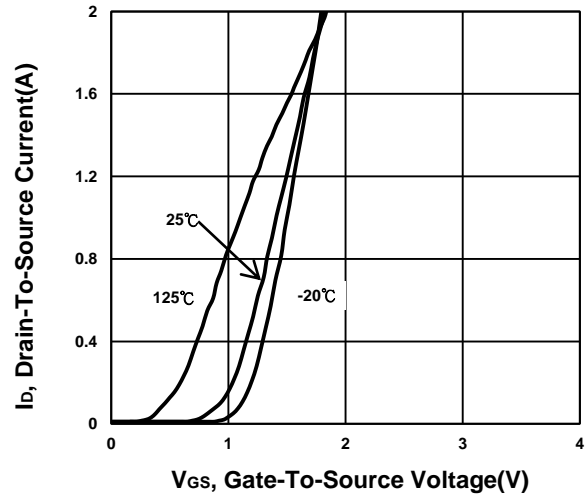
<sup>1</sup>Pulse test : Pulse Width  $\leq 300\ \mu sec$ , Duty Cycle  $\leq 2\%$ .

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

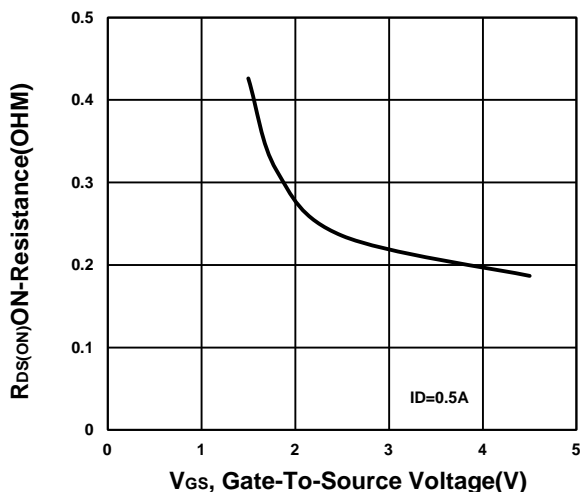
**Output Characteristics**



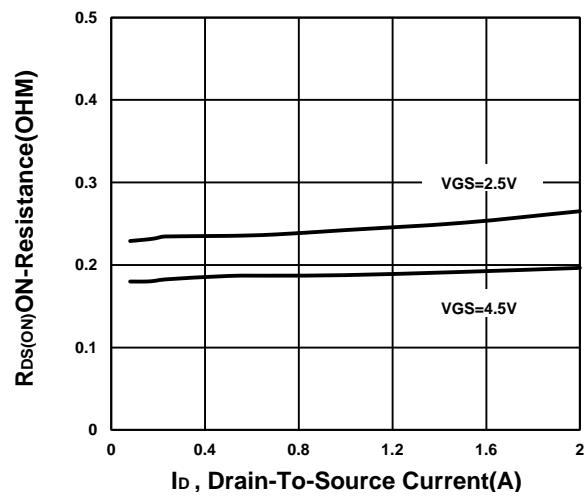
**Transfer Characteristics**



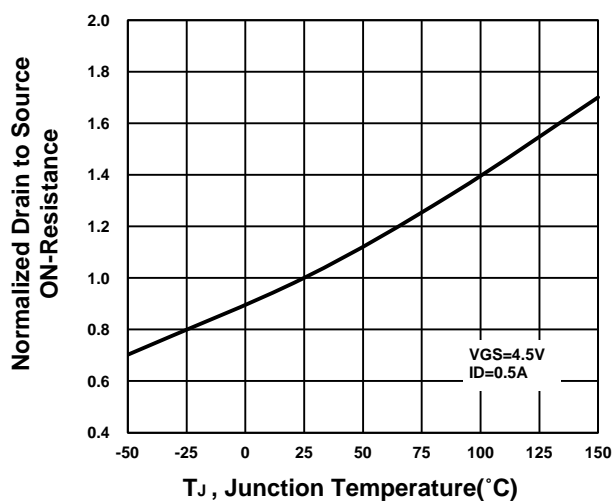
**On-Resistance VS Gate-To-Source Voltage**



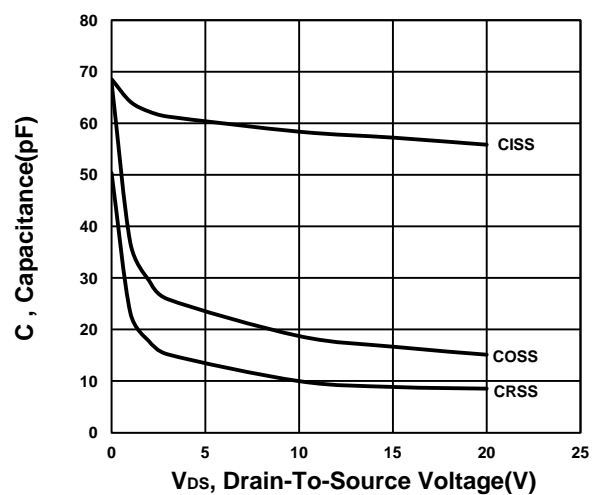
**On-Resistance VS Drain Current**



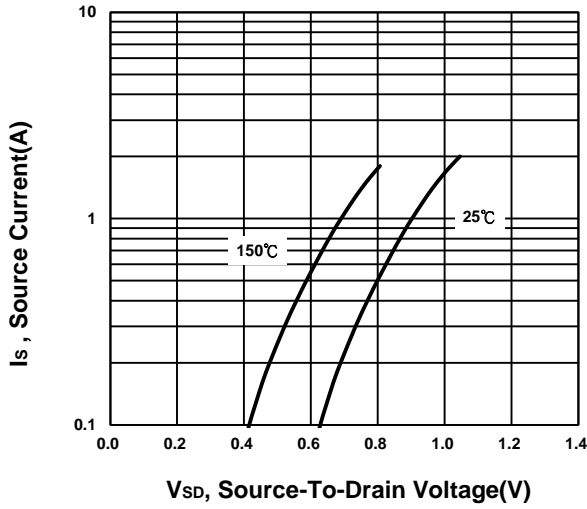
**On-Resistance VS Temperature**



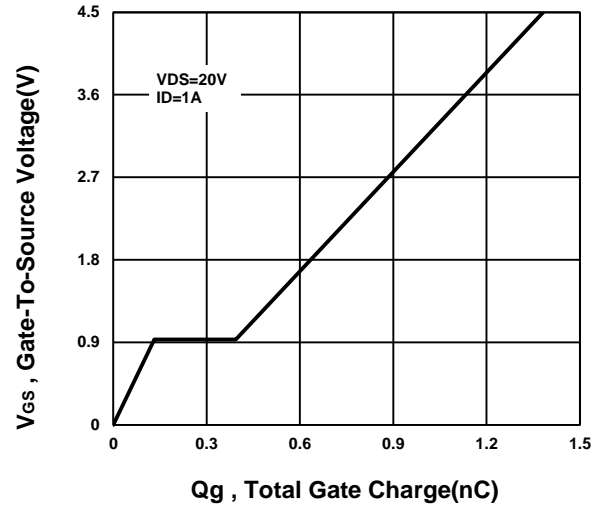
**Capacitance Characteristic**



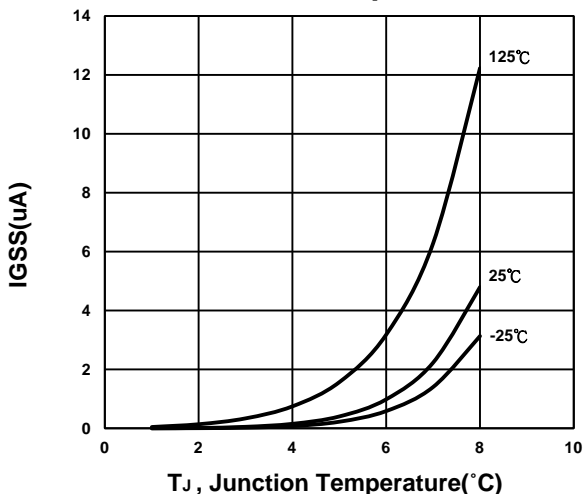
**Source-Drain Diode Forward Voltage**



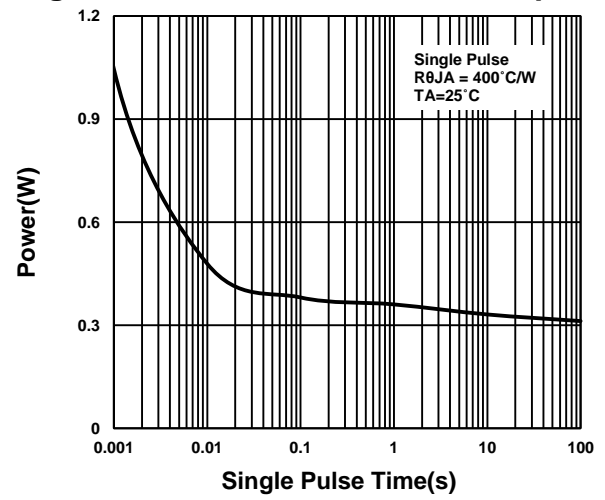
**Gate charge Characteristics**



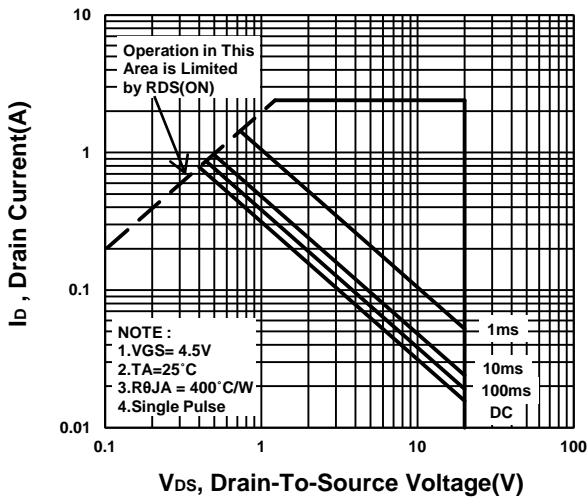
**IGSS VS Temperature**



**Single Pulse Maximum Power Dissipation**



**Safe Operating Area**



**Transient Thermal Response Curve**

