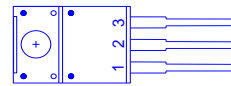
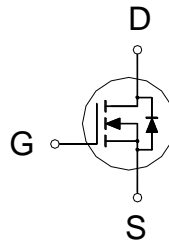




**PRODUCT SUMMARY**

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
650V	0.77 $\Omega$	10A



1. GATE
2. DRAIN
3. SOURCE

**ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25 °C Unless Otherwise Noted)**

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		$V_{DS}$	650	V
Gate-Source Voltage		$V_{GS}$	±30	V
Continuous Drain Current <sup>2</sup>	T <sub>C</sub> = 25 °C	$I_D$	10	A
	T <sub>C</sub> = 100 °C		6	
Pulsed Drain Current <sup>1</sup>		$I_{DM}$	35	
Avalanche Current <sup>3</sup>		$I_{AS}$	5	
Avalanche Energy <sup>3</sup>		$E_{AS}$	125	mJ
Power Dissipation	T <sub>C</sub> = 25 °C	$P_D$	48	W
	T <sub>C</sub> = 100 °C		19	
Operating Junction & Storage Temperature Range		T <sub>j</sub> , T <sub>stg</sub>	-55 to 150	°C

**THERMAL RESISTANCE RATINGS**

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		2.6	°C / W
Junction-to-Ambient	$R_{\theta JA}$		62.5	°C / W

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

<sup>2</sup>Ensure that the channel temperature does not exceed 150°C.

<sup>3</sup>V<sub>DD</sub> = 50V , L = 10mH , starting T<sub>J</sub> = 25°C.

**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	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	650			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	2	2.8	4	
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 30V$			±100	nA

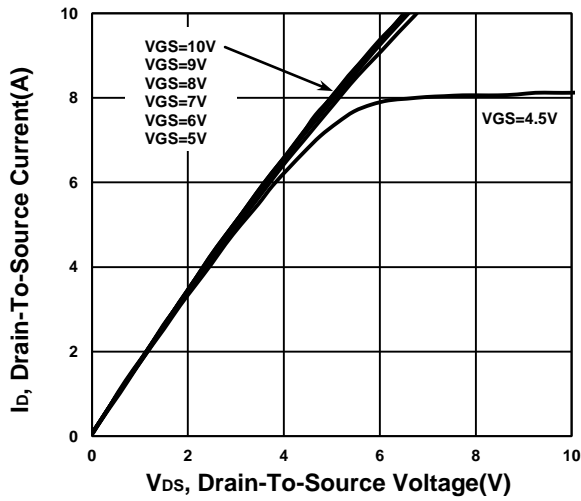
Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 650V, V_{GS} = 0V, T_C = 25\text{ }^\circ\text{C}$			1	$\mu\text{A}$
		$V_{DS} = 520V, V_{GS} = 0V, T_C = 100\text{ }^\circ\text{C}$			10	
Drain-Source On-State Resistance <sup>1</sup>	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 5A$		0.55	0.77	$\Omega$
Forward Transconductance <sup>1</sup>	$g_{fs}$	$V_{DS} = 10V, I_D = 5A$		18		S
<b>DYNAMIC</b>						
Input Capacitance	$C_{iss}$	$V_{GS} = 0V, V_{DS} = 25V, f = 1\text{MHz}$		2017		$\text{pF}$
Output Capacitance	$C_{oss}$			167		
Reverse Transfer Capacitance	$C_{rss}$			9		
Total Gate Charge <sup>2</sup>	$Q_g$	$V_{DD} = 520V, I_D = 10A, V_{GS} = 10V$		44		$\text{nC}$
Gate-Source Charge <sup>2</sup>	$Q_{gs}$			13		
Gate-Drain Charge <sup>2</sup>	$Q_{gd}$			8.5		
Turn-On Delay Time <sup>2</sup>	$t_{d(on)}$	$V_{DD} = 325V, I_D = 10A, R_G = 25\Omega$		33		$\text{nS}$
Rise Time <sup>2</sup>	$t_r$			38		
Turn-Off Delay Time <sup>2</sup>	$t_{d(off)}$			136		
Fall Time <sup>2</sup>	$t_f$			71		
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (<math>T_J = 25\text{ }^\circ\text{C}</math>)</b>						
Continuous Current <sup>3</sup>	$I_S$				10	A
Forward Voltage <sup>1</sup>	$V_{SD}$	$I_F = 10A, V_{GS} = 0V$			1	V
Reverse Recovery Time	$t_{rr}$	$I_F = 10A, di_F/dt = 100A / \mu\text{S}$		451		nS
Reverse Recovery Charge	$Q_{rr}$			5.8		$\mu\text{C}$

<sup>1</sup>Pulse test : Pulse Width  $\leq 380\text{ }\mu\text{sec}$ , Duty Cycle  $\leq 2\%$ .

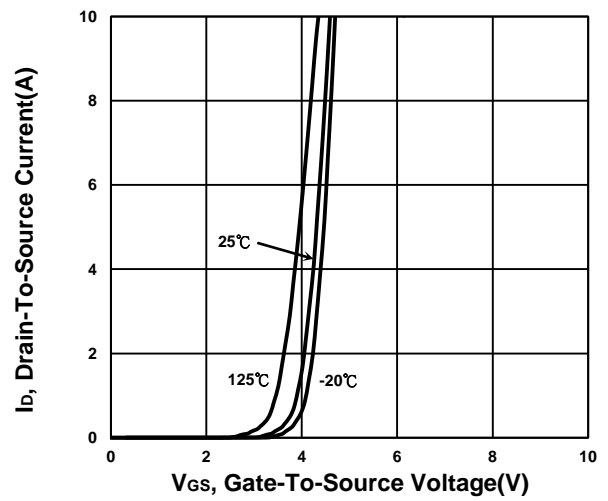
<sup>2</sup>Independent of operating temperature.

<sup>3</sup>Pulse width limited by maximum junction temperature.

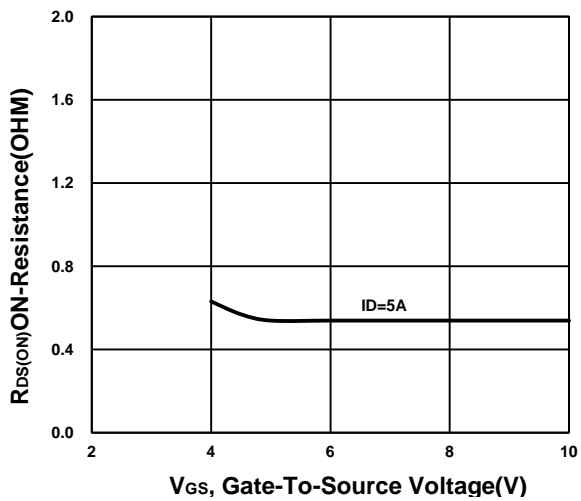
**Output Characteristics**



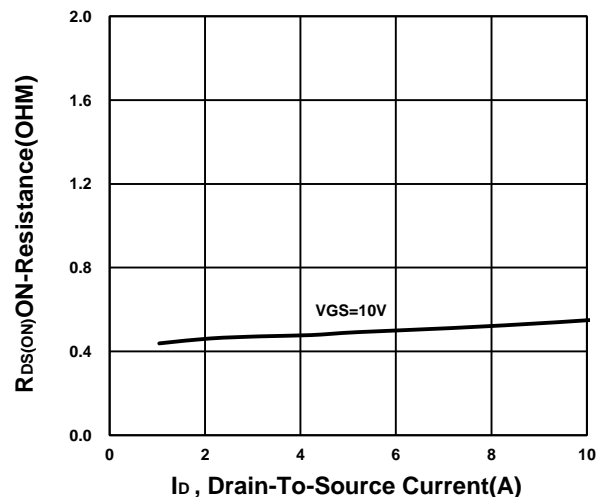
**Transfer Characteristics**



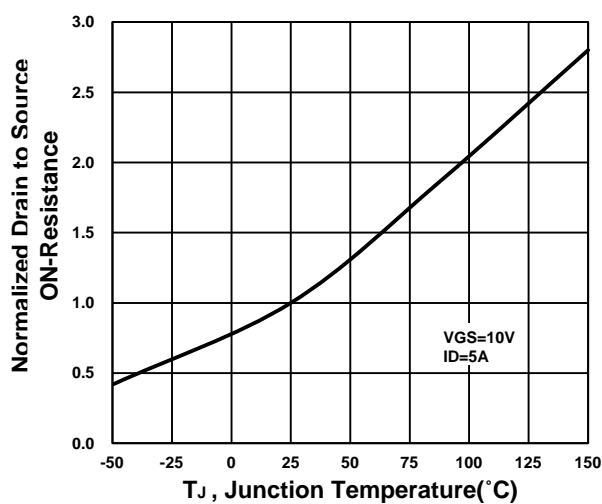
**On-Resistance VS Gate-To-Source**



**On-Resistance VS Drain Current**



**On-Resistance VS Temperature**



**Capacitance Characteristic**

