

Electrical Characteristics: ($T_C=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\ \mu\text{A}$	100	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{GS}=0V, V_{DS}=60V$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0A$	---	---	± 100	nA
On Characteristics³						
$V_{GS(th)}$	GATE-Source Threshold Voltage	$V_{GS}=V_{DS}, I_D=250\ \mu\text{A}$	1.2	1.6	2.5	V
$R_{DS(on)}$	Drain-Source On Resistance	$V_{GS}=10V, I_D=5A$	---	115	120	m Ω
		$V_{GS}=4.5V, I_D=5A$	---	121	135	
G_{FS}	Forward Transconductance	$V_{DS}=5V, I_D=5A$	11	---	---	S
Dynamic Characteristics⁴						
C_{iss}	Input Capacitance	$V_{DS}=30V, V_{GS}=0V, f=1\text{MHz}$	---	979	---	pF
C_{oss}	Output Capacitance		---	120	---	
C_{rss}	Reverse Transfer Capacitance		---	100	---	
Switching Characteristics⁴						
$t_{d(on)}$	Turn-On Delay Time	$V_{DD}=30V, R_L=6.7\Omega$ $V_{GS}=10V, R_G=3\Omega$	---	5.2	---	ns
t_r	Rise Time		---	3	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	17	---	ns
t_f	Fall Time		---	2.5	---	ns
Q_g	Total Gate Charge	$V_{GS}=10V, V_{DS}=30V,$ $I_D=5A$	---	22	---	nC
Q_{gs}	Gate-Source Charge		---	3.3	---	nC
Q_{gd}	Gate-Drain "Miller" Charge		---	5.2	---	nC
Drain-Source Diode Characteristics						
V_{SD}	Source-Drain Diode Forward Voltage ³	$V_{GS}=0V, I_S=5A$	---	---	1.2	V

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, $t \leq 10$ sec.
3. Pulse Test: Pulse Width $\leq 300\ \mu\text{s}$, Duty Cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production
5. EAS condition: $T_j=25^\circ\text{C}$, $V_{DD}=30V, V_G=10V, L=0.5\text{mH}, R_g=25\Omega$.

Typical Characteristics: ($T_c=25^\circ\text{C}$ unless otherwise noted)

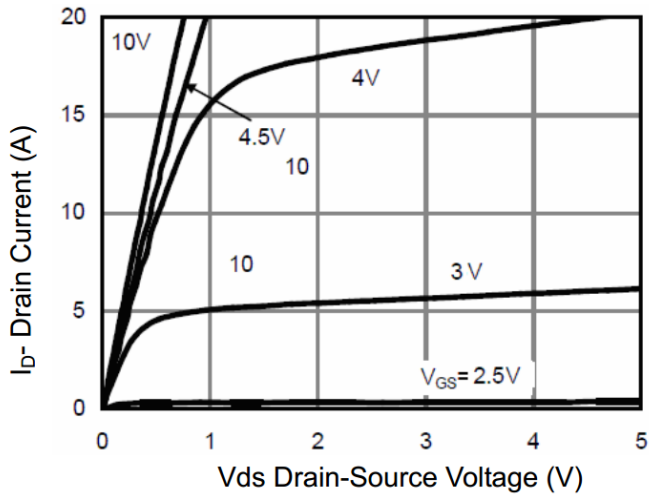


Figure 1 Output Characteristics

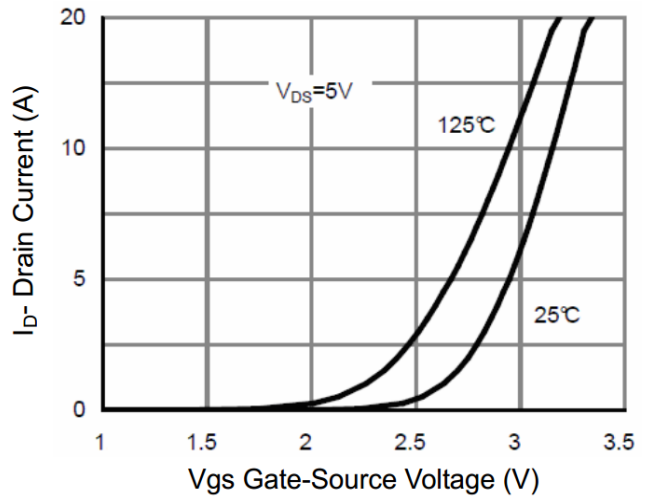


Figure 2 Transfer Characteristics

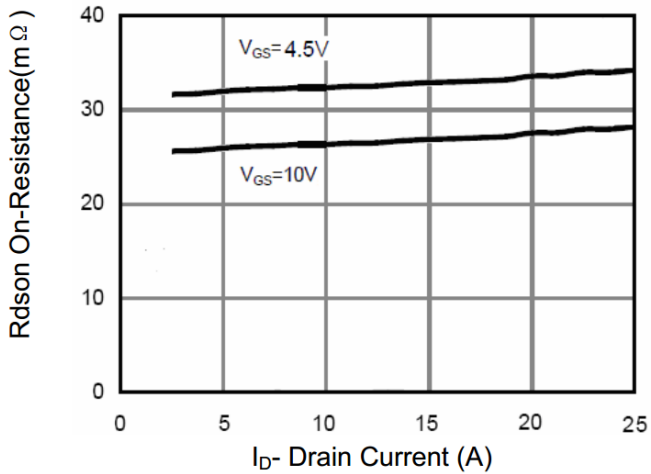


Figure 3 Rdson- Drain Current

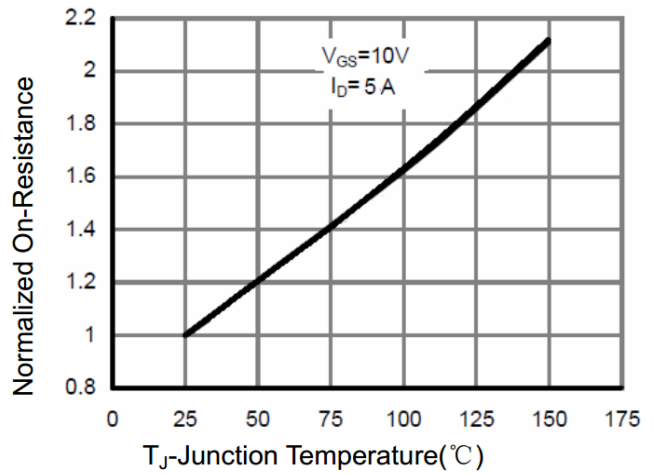


Figure 4 Rdson-Junction Temperature

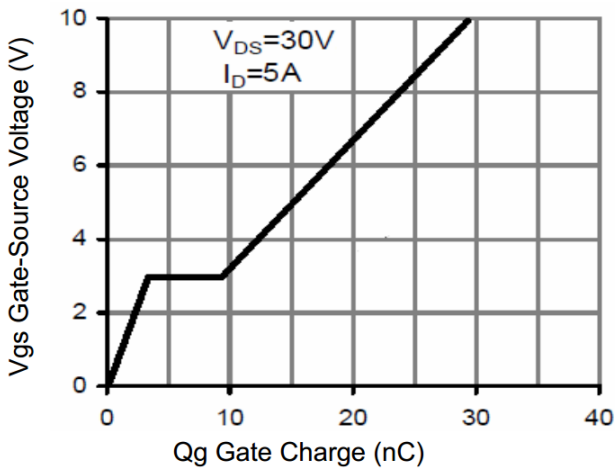


Figure 5 Gate Charge

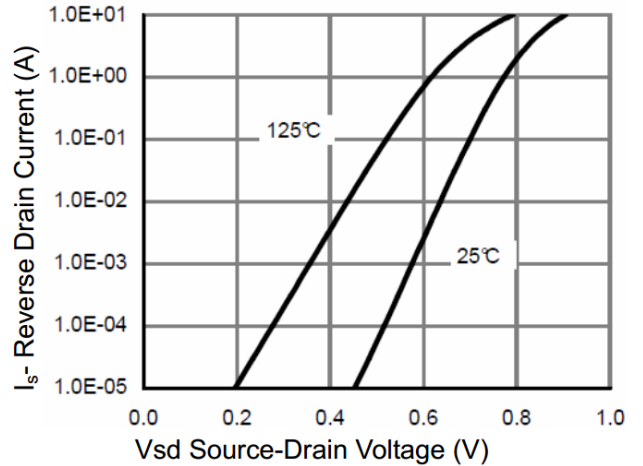


Figure 6 Source- Drain Diode Forward

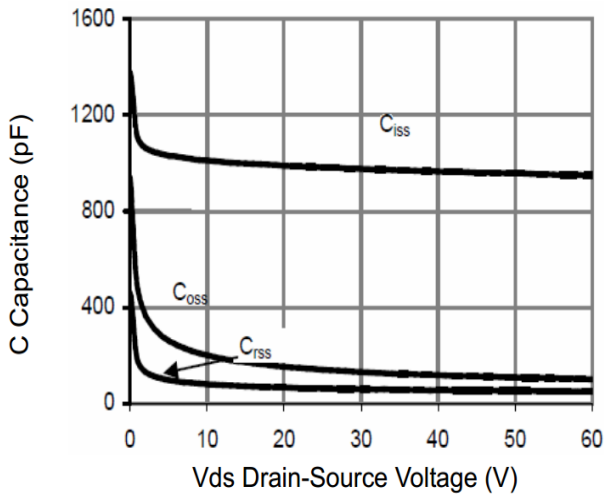


Figure 7 Capacitance vs Vds

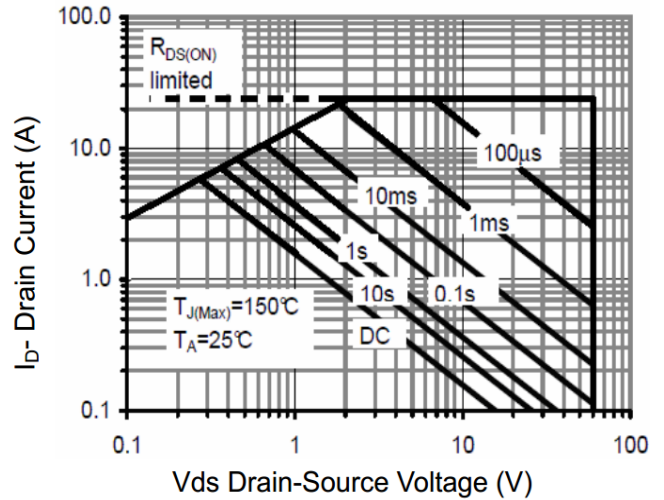


Figure 8 Safe Operation Area

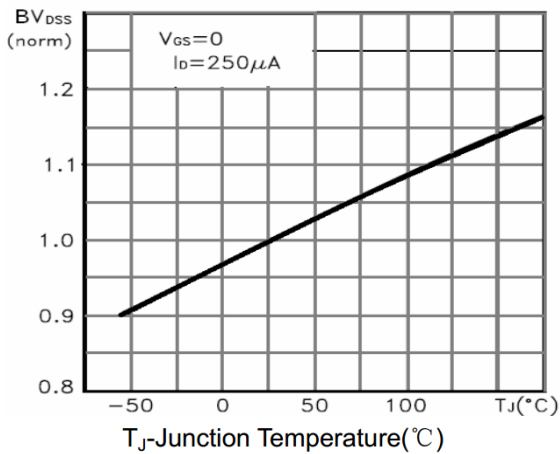


Figure 9 BV_{DSS} vs Junction Temperature

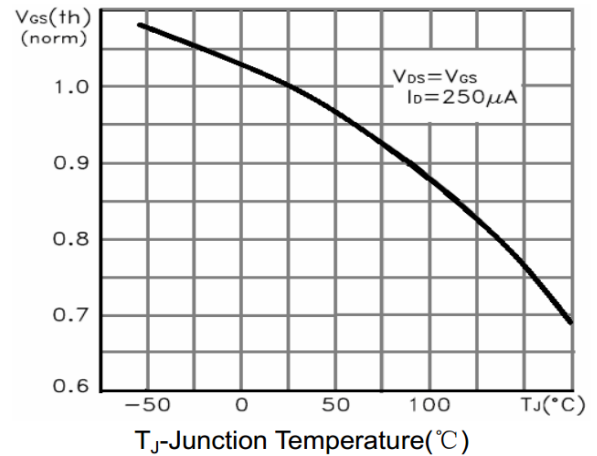


Figure 10 $V_{GS(th)}$ vs Junction Temperature

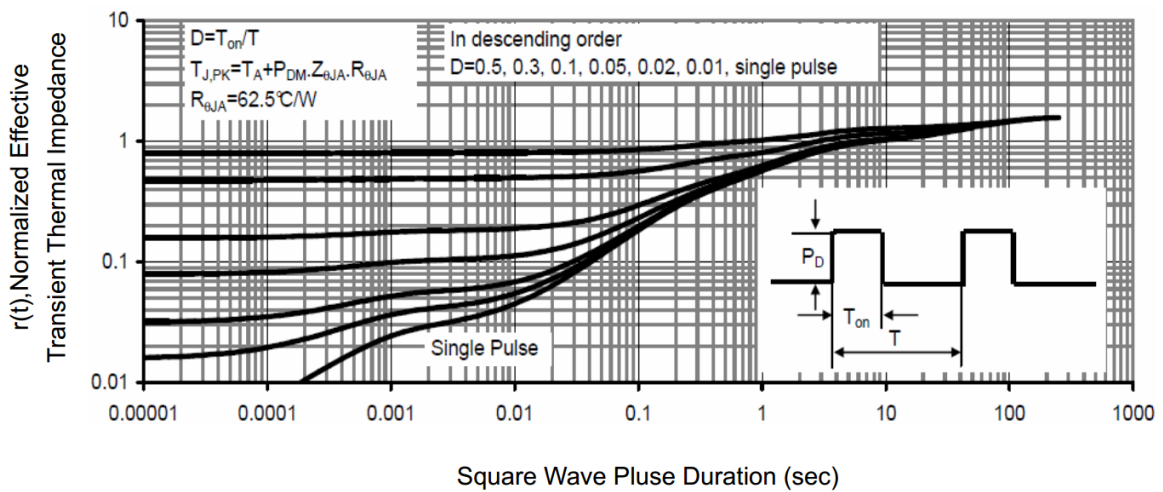


Figure 11 Normalized Maximum Transient Thermal Impedance

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