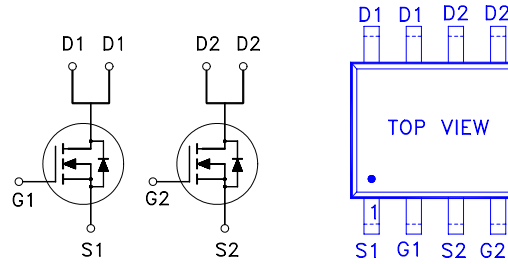


**PRODUCT SUMMARY**

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
60	55m	4.5A



G : GATE  
D : DRAIN  
S : SOURCE

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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		$V_{DS}$	60	V
Gate-Source Voltage		$V_{GS}$	$\pm 20$	V
Continuous Drain Current	$T_C = 25\text{ }^\circ\text{C}$	$I_D$	4.5	A
	$T_C = 70\text{ }^\circ\text{C}$		4	
Pulsed Drain Current <sup>1</sup>		$I_{DM}$	20	
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	$P_D$	2	W
	$T_C = 70\text{ }^\circ\text{C}$		1.3	
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	$R_{\theta JA}$		62.5	$^\circ\text{C} / \text{W}$

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

<sup>2</sup>Duty cycle  $\leq 1\%$

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

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
<b>STATIC</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu\text{A}$	60			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	1.0	1.5	2.5	
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 20V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 48V, V_{GS} = 0V$			1	$\mu\text{A}$
		$V_{DS} = 40V, V_{GS} = 0V, T_j = 55\text{ }^\circ\text{C}$			10	

On-State Drain Current <sup>1</sup>	$I_{D(ON)}$	$V_{DS} = 5V, V_{GS} = 10V$	20			A
Drain-Source Resistance <sup>1</sup>	On-State $R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 4A$		55	75	m
		$V_{GS} = 10V, I_D = 4.5A$		42	55	
Forward Transconductance <sup>1</sup>	$g_{fs}$	$V_{DS} = 10V, I_D = 4.5A$		14		S

DYNAMIC						
Input Capacitance	$C_{iss}$	$V_{GS} = 0V, V_{DS} = 25V, f = 1MHz$			650	pF
Output Capacitance	$C_{oss}$				80	
Reverse Transfer Capacitance	$C_{rss}$				35	
Total Gate Charge <sup>2</sup>	$Q_g$	$V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = 10V, I_D = 4.5A$			12.5	nC
Gate-Source Charge <sup>2</sup>	$Q_{gs}$				2.4	
Gate-Drain Charge <sup>2</sup>	$Q_{gd}$				2.6	
Turn-On Delay Time <sup>2</sup>	$t_{d(on)}$	$V_{DD} = 30V, I_D \cong 1A, V_{GS} = 10V, R_{GEN} = 6$			11	nS
Rise Time <sup>2</sup>	$t_r$				8	
Turn-Off Delay Time <sup>2</sup>	$t_{d(off)}$				19	
Fall Time <sup>2</sup>	$t_f$				6	

**SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T<sub>c</sub> = 25 °C)**

Continuous Current	$I_S$				1.3	A
Pulsed Current <sup>3</sup>	$I_{SM}$				2.6	
Forward Voltage <sup>1</sup>	$V_{SD}$	$I_F = I_S A, V_{GS} = 0V$			1	V

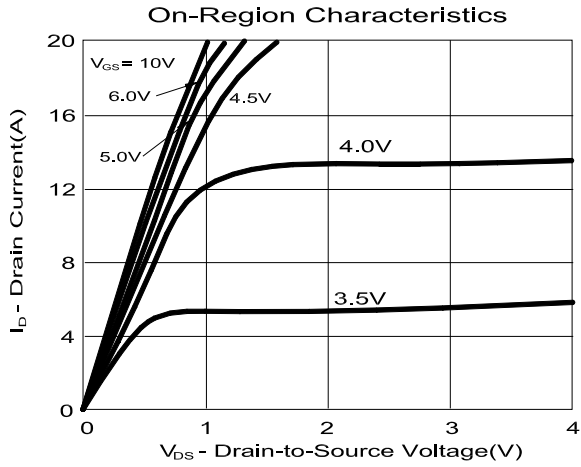
<sup>1</sup>Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

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

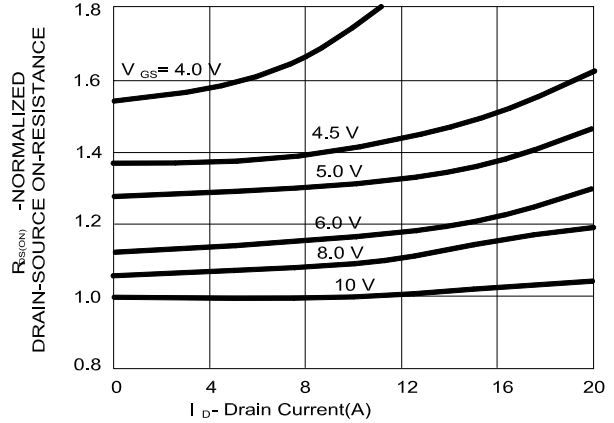
<sup>3</sup>Pulse width limited by maximum junction temperature.

**REMARK: THE PRODUCT MARKED WITH “P5506HVG”, DATE CODE or LOT #**

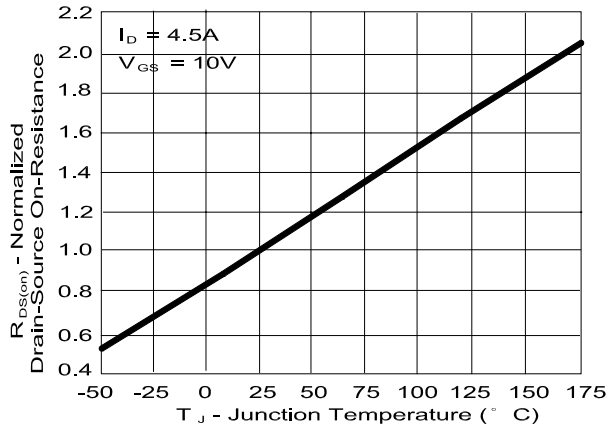
**Orders for parts with Lead-Free plating can be placed using the PXXXXXXG parts name.**



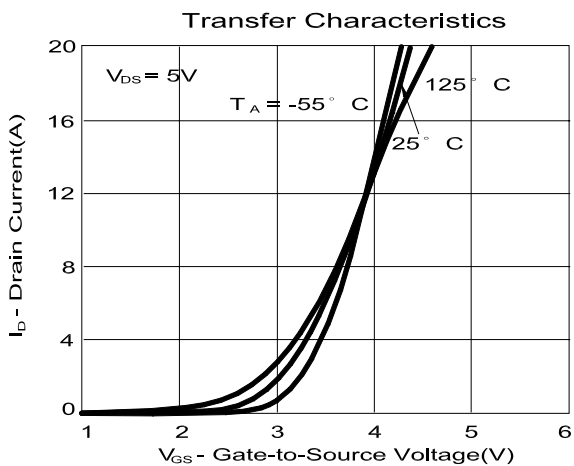
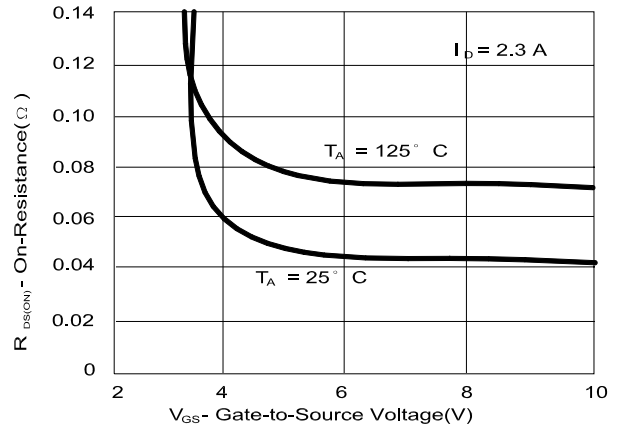
On-Resistance Variation with Drain Current and Gate Voltage



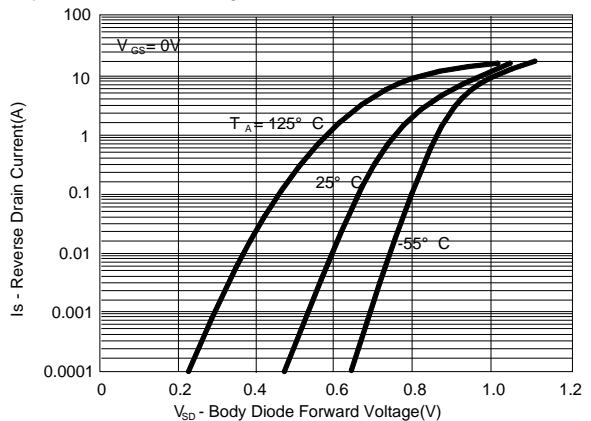
On-Resistance Variation with Temperature

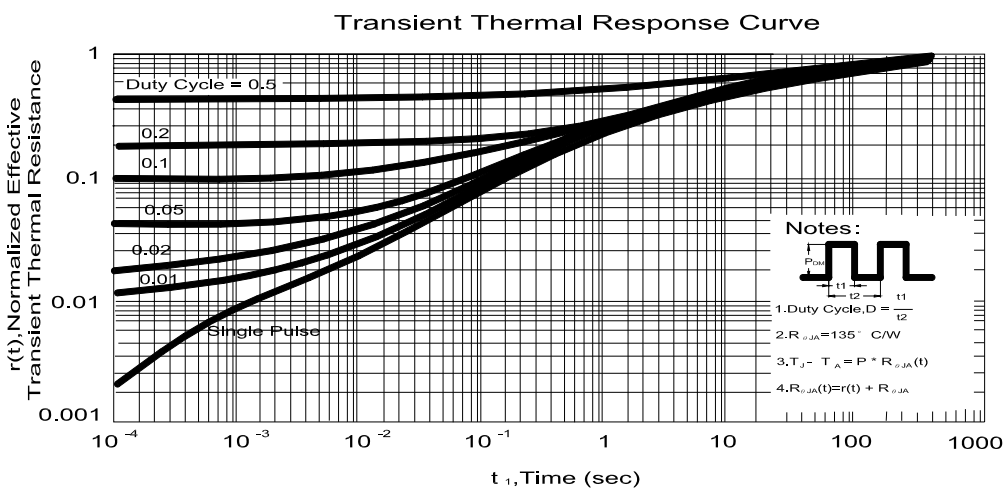
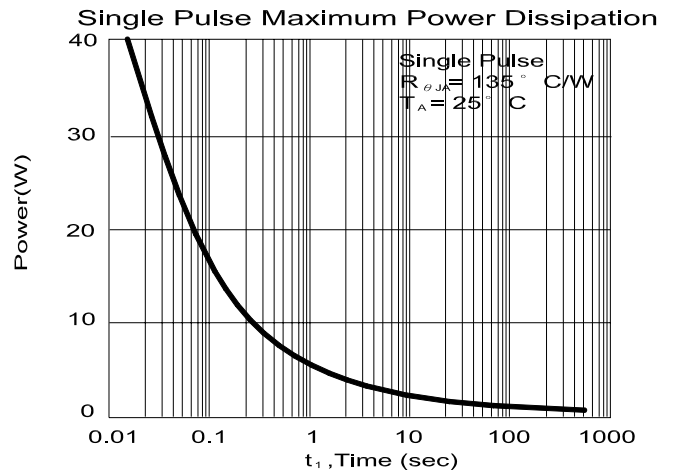
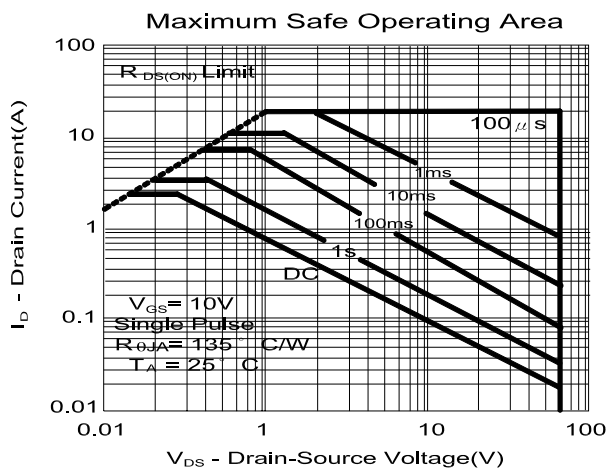
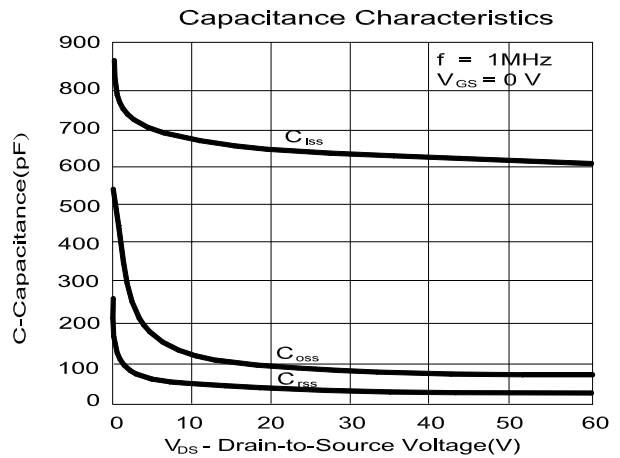
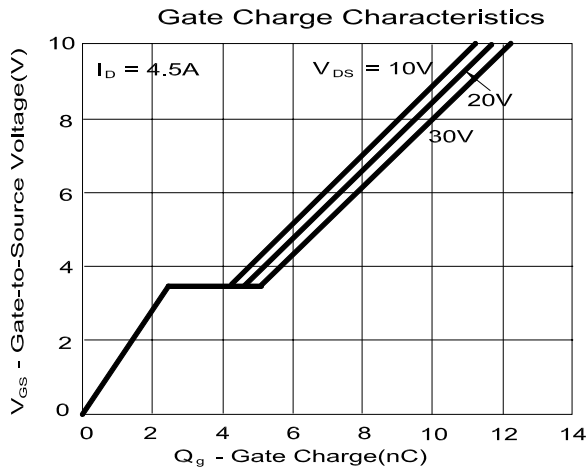


On-Resistance Variation with Gate-to-Source Voltage



Body Diode Forward Voltage Variation with Source Current and Temperature





**SOIC-8(D) MECHANICAL DATA**

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	4.8	4.9	5.0	H	0.5	0.715	0.83
B	3.8	3.9	4.0	I	0.18	0.254	0.25
C	5.8	6.0	6.2	J		0.22	
D	0.38	0.445	0.51	K	0°	4°	8°
E		1.27		L			
F	1.35	1.55	1.75	M			
G	0.1	0.175	0.25	N			

