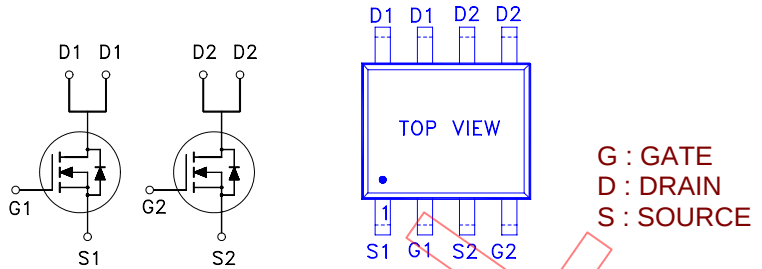


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
30	68m Ω	4.5A

ABSOLUTE MAXIMUM RATINGS ($T_C = 25\text{ }^{\circ}\text{C}$ 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	$T_C = 25\text{ }^{\circ}\text{C}$	I_D	4.5	A
	$T_C = 70\text{ }^{\circ}\text{C}$		3.6	
Pulsed Drain Current ¹		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	$^{\circ}\text{C}$
Lead Temperature (¹ / ₁₆ " from case for 10 sec.)		T_L	275	

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient	$R_{\theta JA}$		62.5	$^{\circ}\text{C} / \text{W}$

¹Pulse width limited by maximum junction temperature.²Duty cycle $\leq 1\%$ ELECTRICAL CHARACTERISTICS ($T_C = 25\text{ }^{\circ}\text{C}$, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.5	3.0	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24V, V_{GS} = 0V$			1	μA
		$V_{DS} = 20V, V_{GS} = 0V, T_J = 55\text{ }^{\circ}C$			10	
On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = 5V, V_{GS} = 10V$	20			A
On-State Drain-Source Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 5V, I_D = 3.5A$		75	98	mΩ
		$V_{GS} = 10V, I_D = 4.5A$		55	68	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 4.5A$		4.5		S

DYNAMIC						
Input Capacitance	C _{ISS}	V _{GS} = 0V, V _{DS} = 15V, f = 1MHz		200	240	pF
Output Capacitance	C _{OSS}			40	55	
Reverse Transfer Capacitance	C _{RSS}			20	30	
Total Gate Charge ²	Q _g	V _{DS} = 0.5V _{(BR)DSS} , V _{GS} = 10V, I _D = 4.5A		6.5	8.5	nC
Gate-Source Charge ²	Q _{gs}			1.2	1.8	
Gate-Drain Charge ²	Q _{gd}			1.6	2.4	
Turn-On Delay Time ²	t _{d(on)}	V _{DS} = 15V, R _L = 15Ω I _D ≅ 1A, V _{GS} = 10V, R _{GEN} = 6Ω		7	11	nS
Rise Time ²	t _r			12	18	
Turn-Off Delay Time ²	t _{d(off)}			12	18	
Fall Time ²	t _f			7	11	
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T _c = 25 °C)						
Forward Voltage ¹	V _{SD}	I _F = 1A, V _{GS} = 0V			1.2	V
Reverse Recovery Time	t _{rr}	I _F = 1A, di _F /dt = 100A / μS		40	80	nS

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

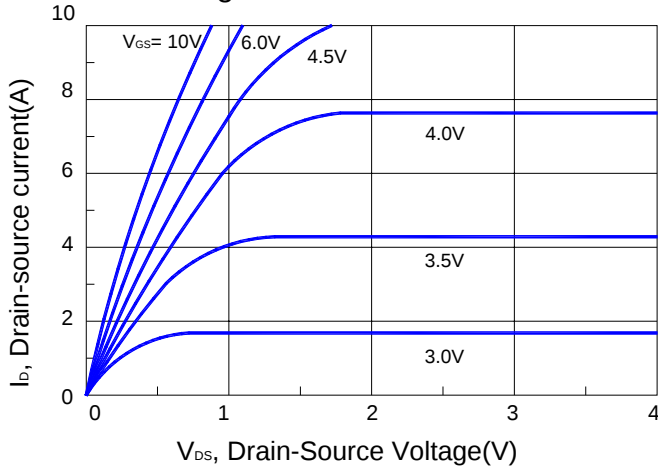
²Independent of operating temperature.

³Pulse width limited by maximum junction temperature.

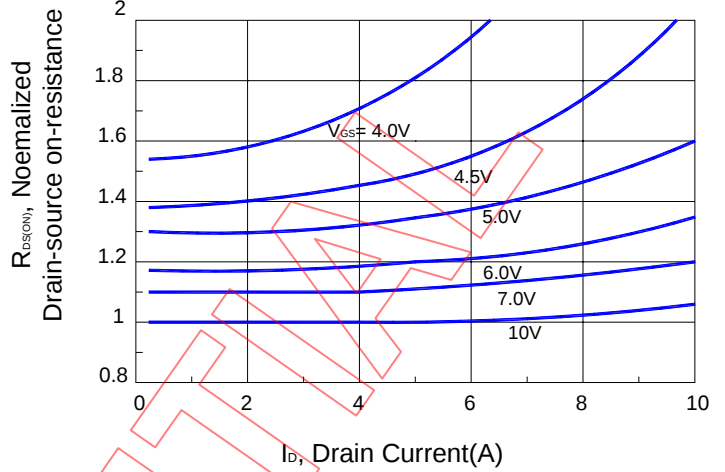
REMARK: THIS PRODUCT MARKED WITH "P6803HVG"
Orders for parts with Lead-Free plating can be placed using the PXXXXXXG parts name.

Typical Electrical Characteristics

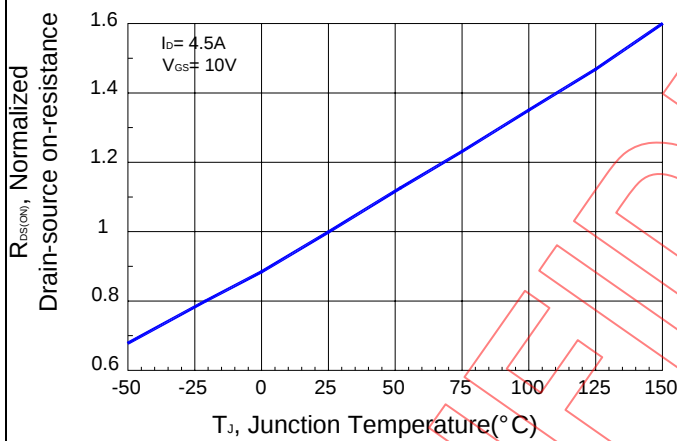
On-Region Characteristics.



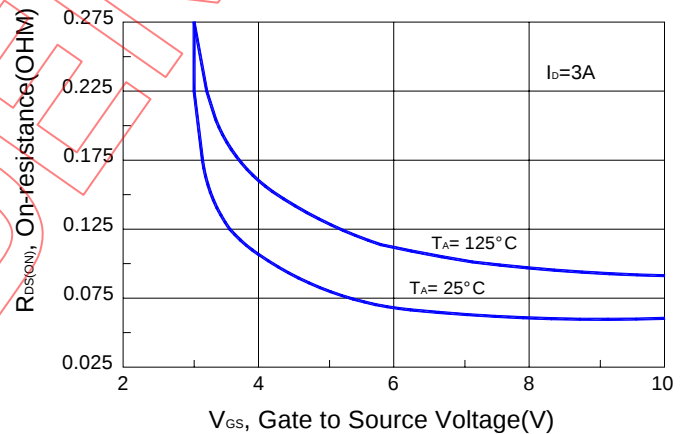
On-Resistance Variation with Drain Current and Gate Voltage.



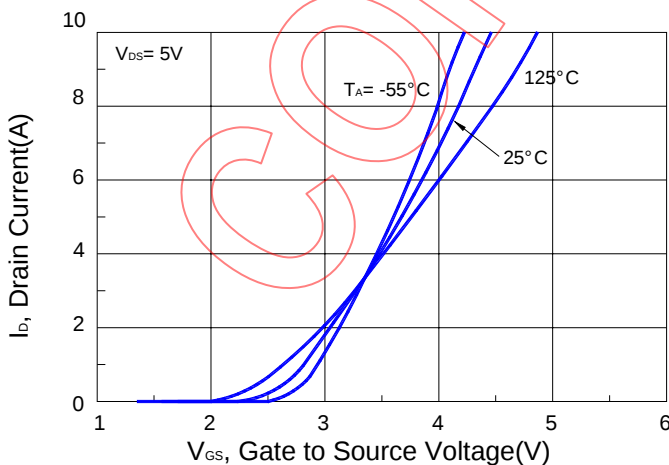
On-Resistance Variation with Temperature.



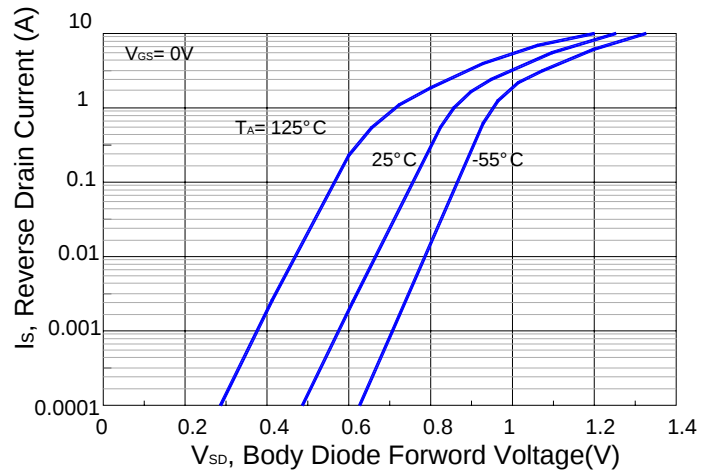
On-Resistance Variation with Gate-to-Source Voltage.



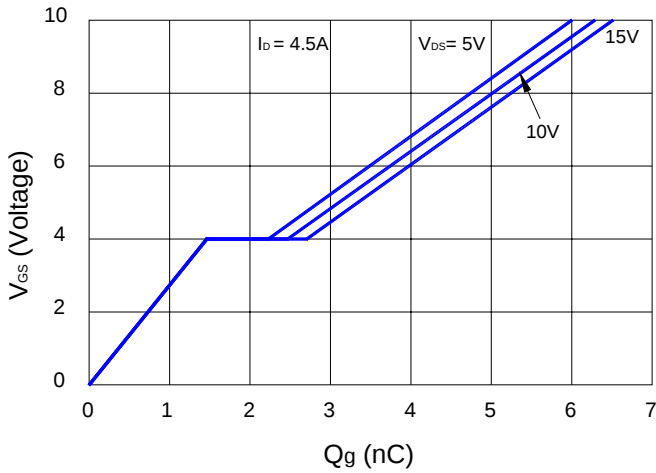
Transfer Characteristics.



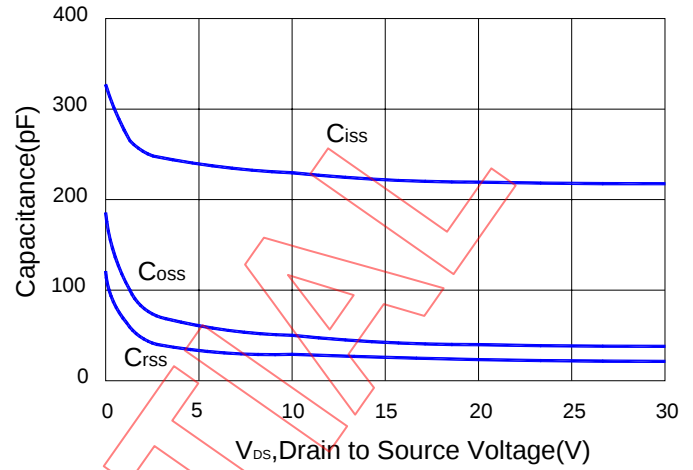
Body Diode Forward Voltage Variation with Source Current and Temperature.



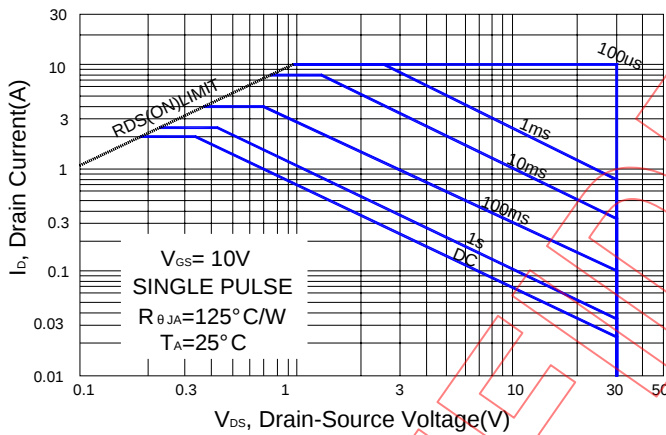
Gate-Charge Characteristics



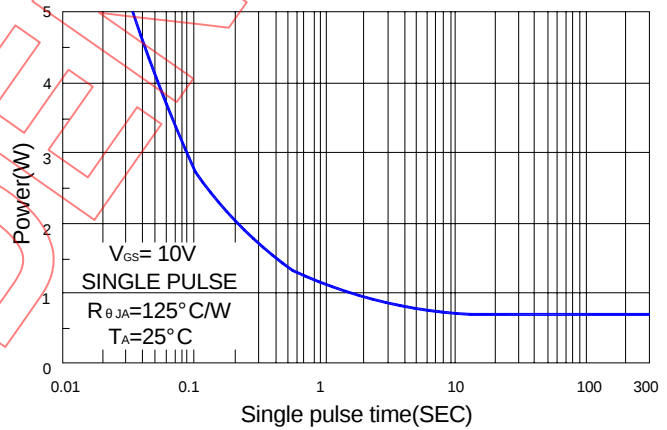
Capacitance Characteristics



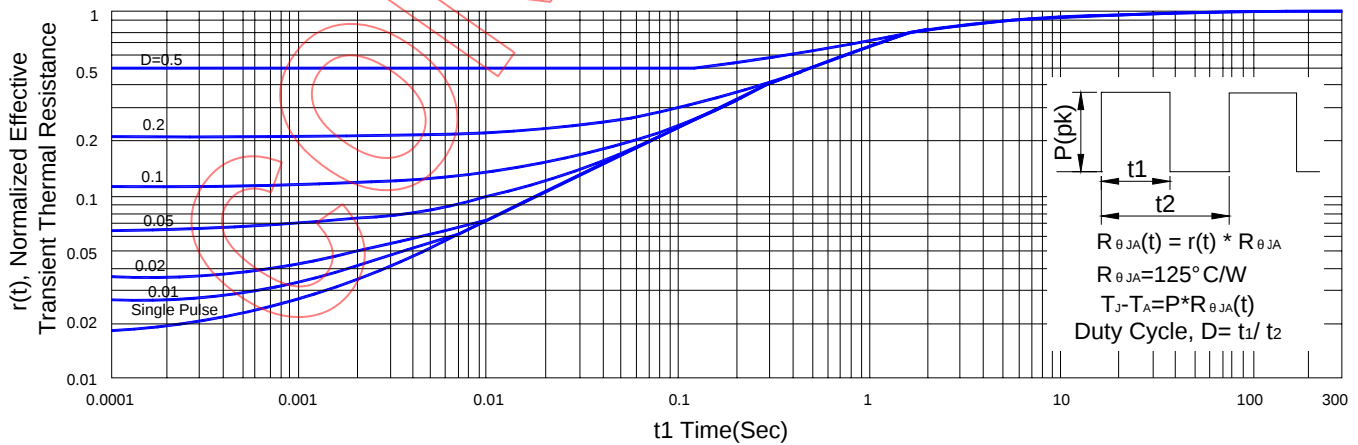
Maximum Safe Operating Area.



Single Pulse Maximum Power Dissipation.



Transient Thermal Response Curve.



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			

