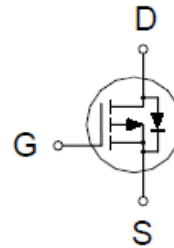
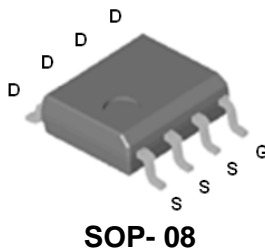


P9006EVG

P-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-60V	90m Ω @ $V_{GS} = -10V$	-4.5A



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	-60	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current	$T_A = 25\text{ }^\circ\text{C}$	I_D	-4.5	A
	$T_A = 70\text{ }^\circ\text{C}$		-3.5	
Pulsed Drain Current ¹		I_{DM}	-20	
Power Dissipation	$T_A = 25\text{ }^\circ\text{C}$	P_D	2.5	W
	$T_A = 70\text{ }^\circ\text{C}$		1.6	
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	$R_{\theta JA}$		50	$^\circ\text{C} / \text{W}$

¹Pulse width limited by maximum junction temperature.

²Duty cycle $\leq 1\%$.

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ELECTRICAL CHARACTERISTICS (T_J = 25 °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 = -250μA	-60			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-1.0	-1.5	-2.5	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±250	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -48V, V _{GS} = 0V			1	μA
		V _{DS} = -36V, V _{GS} = 0V, T _J = 125 °C			10	
On-State Drain Current ¹	I _{D(ON)}	V _{DS} = -5V, V _{GS} = -10V	-20			A
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = -4.5V, I _D = -3.5A		90	150	mΩ
		V _{GS} = -10V, I _D = -4.5A		70	90	
Forward Transconductance ¹	g _{fs}	V _{DS} = -10V, I _D = -4.5A		9		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = -30V, f = 1MHz		760		pF
Output Capacitance	C _{oss}			90		
Reverse Transfer Capacitance	C _{rss}			40		
Total Gate Charge ²	Q _g	V _{DS} = 0.5V _{(BR)DSS} , I _D = -4.5A, V _{GS} = -10V		15.0		nC
Gate-Source Charge ²	Q _{gs}			2.5		
Gate-Drain Charge ²	Q _{gd}			3.0		
Turn-On Delay Time ²	t _{d(on)}	V _{DS} = -20V, I _D ≅ -1A, V _{GS} = -10V, R _{GS} = 6Ω		7	14	nS
Rise Time ²	t _r			10	20	
Turn-Off Delay Time ²	t _{d(off)}			19	34	
Fall Time ²	t _f			12	22	
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I _S				-1.3	A
Pulsed Current ³	I _{SM}				-2.6	
Forward Voltage ¹	V _{SD}	I _F = I _S , V _{GS} = 0V			-1	V
Reverse Recovery Time	t _{rr}	I _F = -3.5A, dI _F /dt = 100A / μS		15.5		nS
Reverse Recovery Charge	Q _{rr}				7.9	

¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

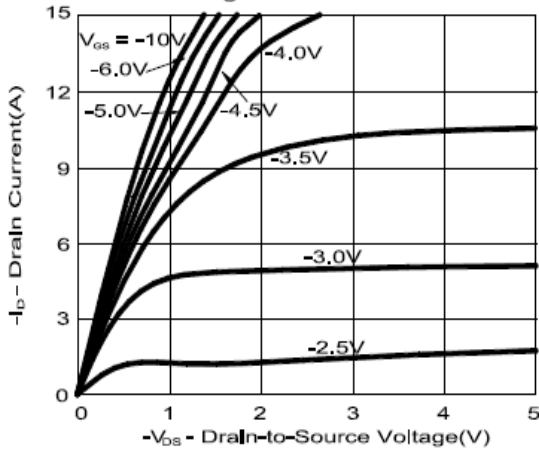
³Pulse width limited by maximum junction temperature.

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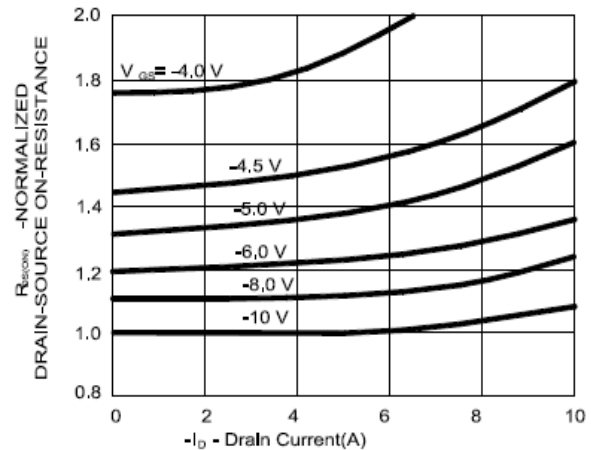
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TYPICAL PERFORMANCE CHARACTERISTICS

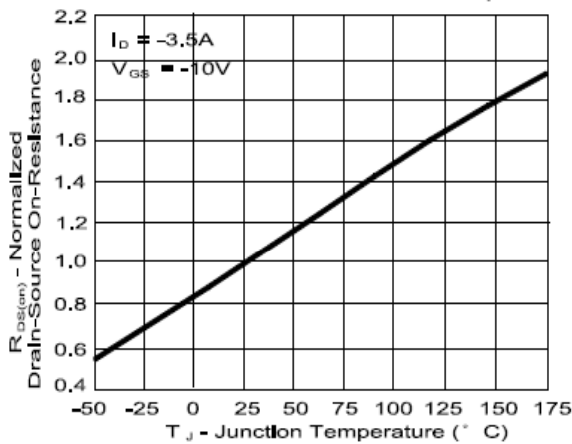
On-Region Characteristics



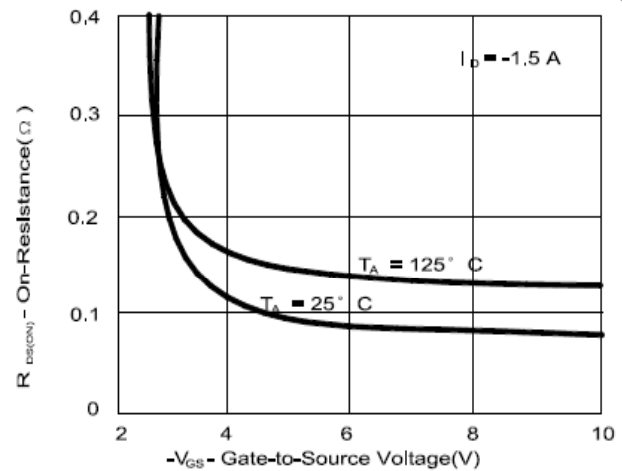
On-Resistance Variation with Drain Current and Gate Voltage



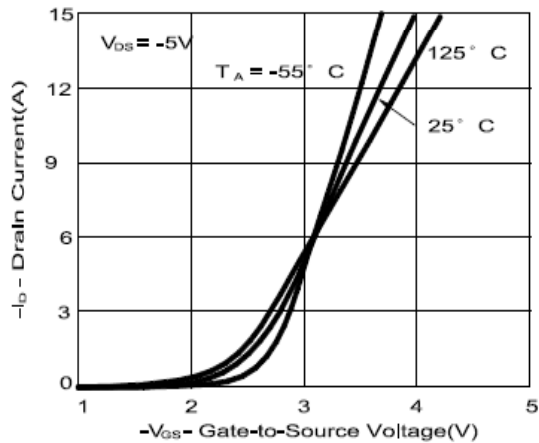
On-Resistance Variation with Temperature



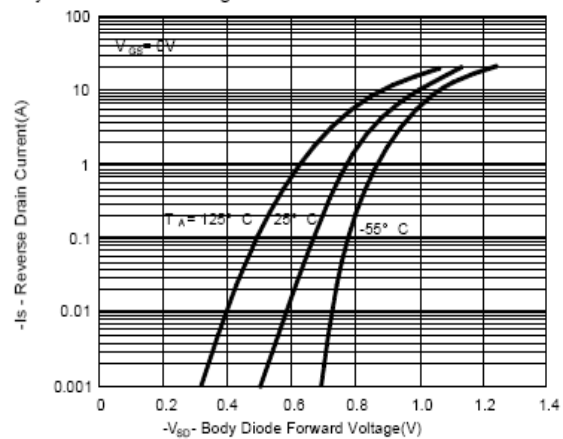
On-Resistance Variation with Gate-to-Source Voltage



Transfer Characteristics

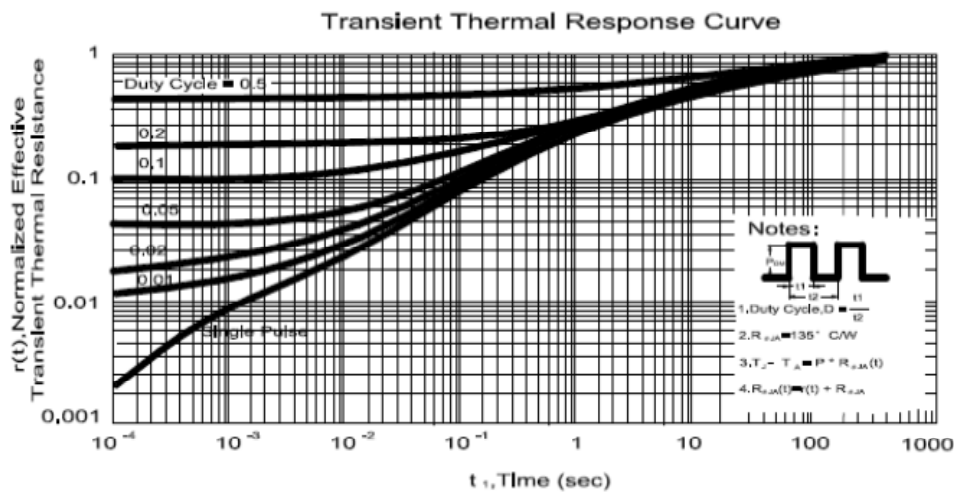
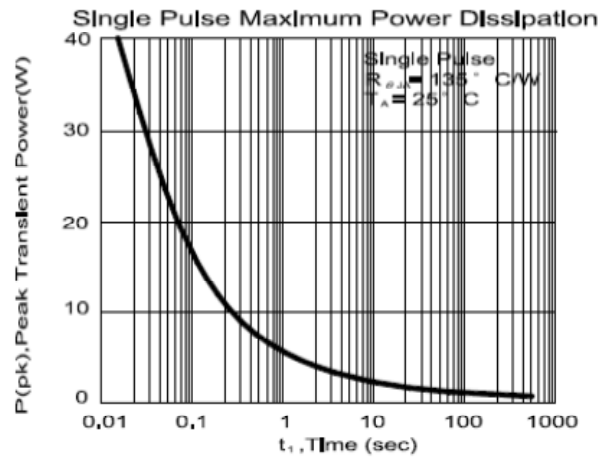
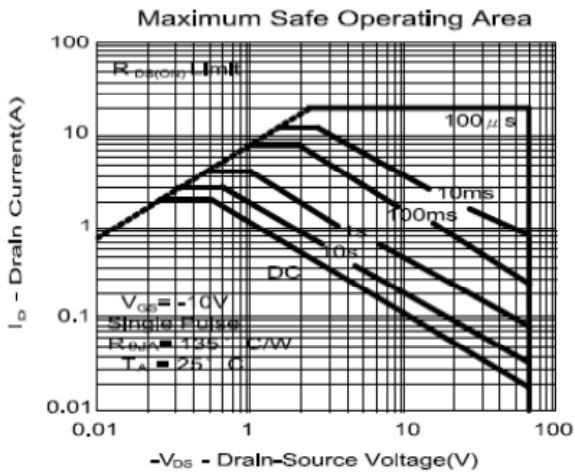
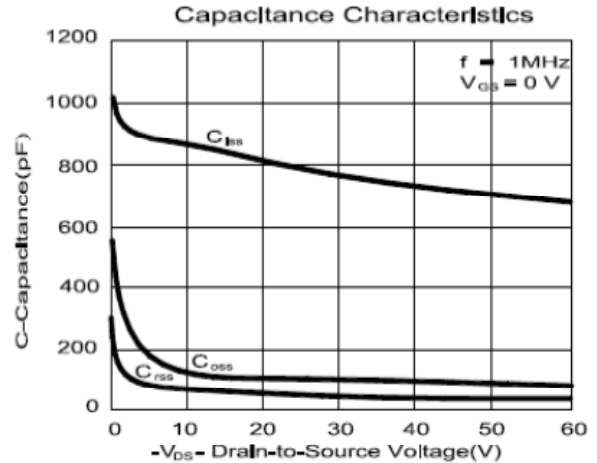
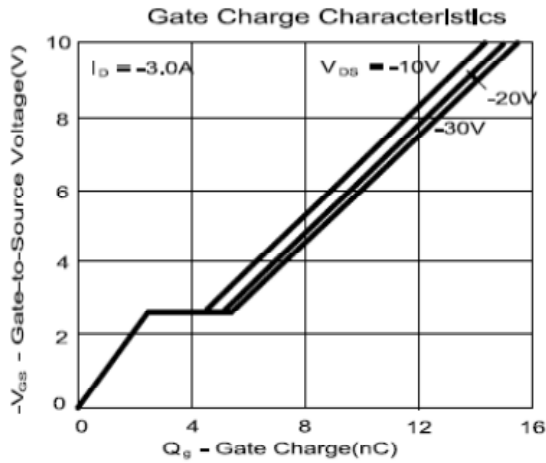


Body Diode Forward Voltage Variation with Source Current and Temperature



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Package Dimension

SOP-8 MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	4.8	4.9	5.0	H	0.4	0.6	0.93
B	3.8	3.9	4.0	I	0.19	0.21	0.25
C	5.79	6.0	6.2	J	0.25	0.375	0.5
D	0.33	0.4	0.51	K	0°	3°	18°
E	1.25	1.27	1.29				
F	1.1	1.3	1.65				
G	0.05	0.15	0.25				

