UNIKC Semiconductor

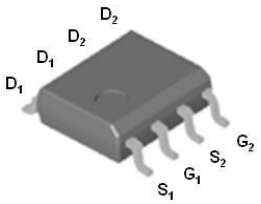
RoHS Compliant

P8008HV

N-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
80V	80mΩ @V_{GS} = 10V	4A



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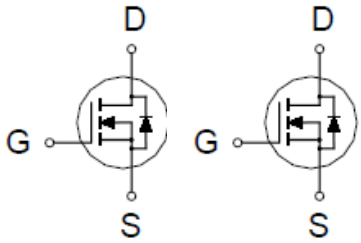

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	80	V
Gate-Source Voltage		V_{GS}	±25	
Continuous Drain Current	T_A = 25 °C	I_D	4	A
	T_A = 70 °C		3	
Pulsed Drain Current[1]		I_{DM}	20	
Power Dissipation	T_A = 25 °C	P_D	1.9	W
	T_A = 70 °C		1.2	
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55 to 150	°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	$R_{\theta JA}$		65	°C / W
Junction-to-Lead	$R_{\theta JL}$		25	

[1]Pulse width limited by maximum junction temperature.

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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	80			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	1.0	2.0	3.0	
Gate-Body Leakage	I_{GSS}	V_{DS} = 0V, V_{GS} = ±25V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 64V, V_{GS} = 0V			1	μA
		V_{DS} = 64V, V_{GS} = 0V , T_J = 70 °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 = 1A		70	90	mΩ
		V_{GS} = 10V, I_D = 3A		60	80	
Forward Transconductance[1]	g_{fs}	V_{DS} = 10V, I_D = 4A		7.5		S
DYNAMIC						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 25V, f = 1MHz		1165	1400	pF
Output Capacitance	C_{oss}			104		
Reverse Transfer Capacitance	C_{rss}			57		
Gate Resistance	R_g	V_{GS} = 0V, V_{DS} = 0V, f = 1MHz		1.5	1.8	Ω
Total Gate Charge[2] (10V)	Q_g	V_{DS} = 0.5$V_{(BR)DSS}$, V_{GS} = 10V, I_D = 4A		29.0		nC
Total Gate Charge[2] (4.5V)	Q_g			12.0		
Gate-Source Charge[2]	Q_{gs}			2.0		
Gate-Drain Charge[2]	Q_{gd}			6.8		
Turn-On Delay Time[2]	$t_{d(on)}$	V_{DS} = 0.5$V_{(BR)DSS}$, R_L = 40Ω I_D ≅ 4A, V_{GS} = 10V, R_G = 3.3Ω		6.0		nS
Rise Time[2]	t_r			3.8		
Turn-Off Delay Time[2]	$t_{d(off)}$			21.0		
Fall Time[2]	t_f			5.0		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I_S				4	A
Pulsed Current[3]	I_{SM}				20	
Forward Voltage[1]	V_{SD}	I_F = 1A, V_{GS} = 0V		1	1.3	V
Reverse Recovery Time	t_{rr}	I_F = Is, dI_F/dt = 100A / μS		30		nS
Reverse Recovery Charge	Q_{rr}			40		nC

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

[2]Independent of operating temperature.

[3]Pulse width limited by maximum junction temperature.

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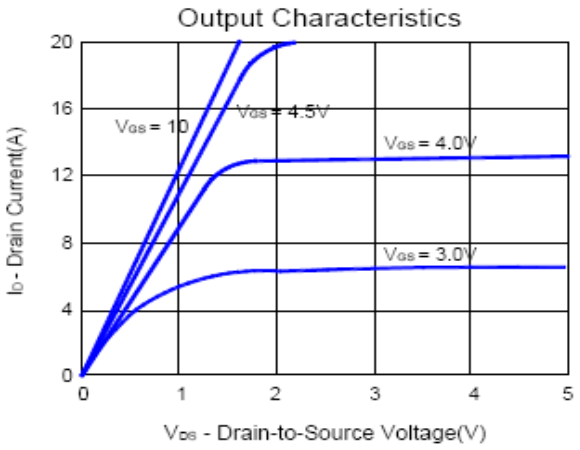

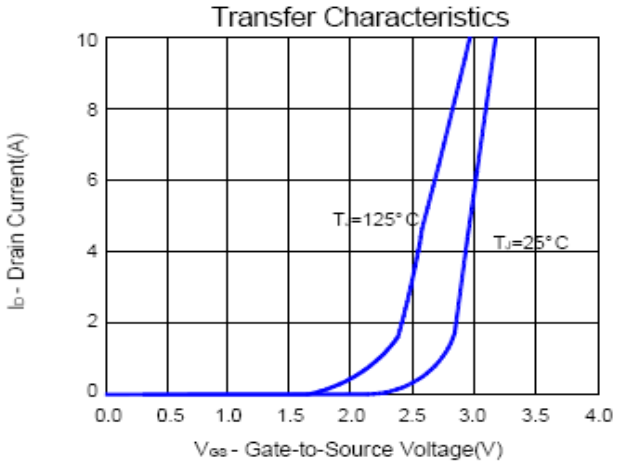

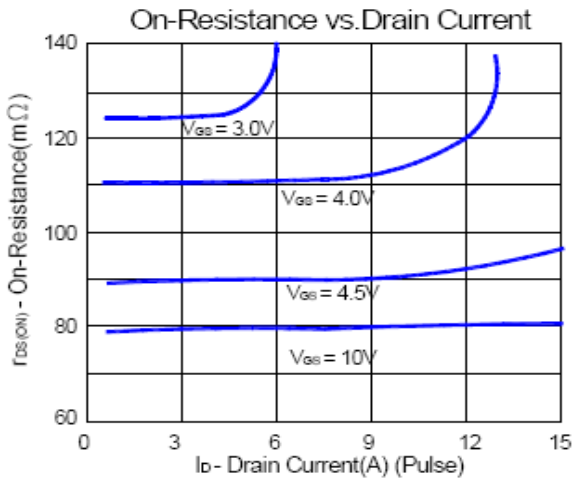

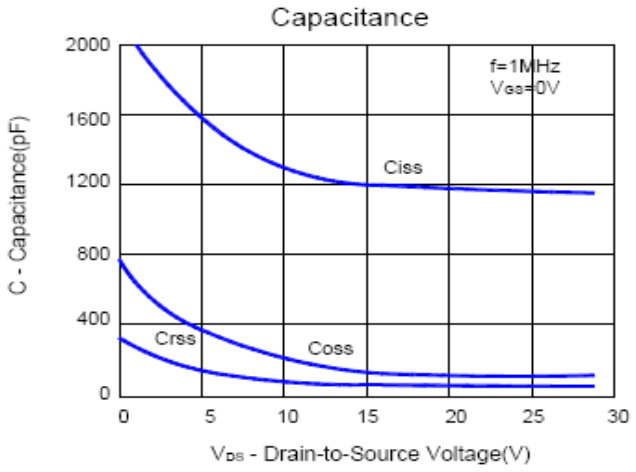

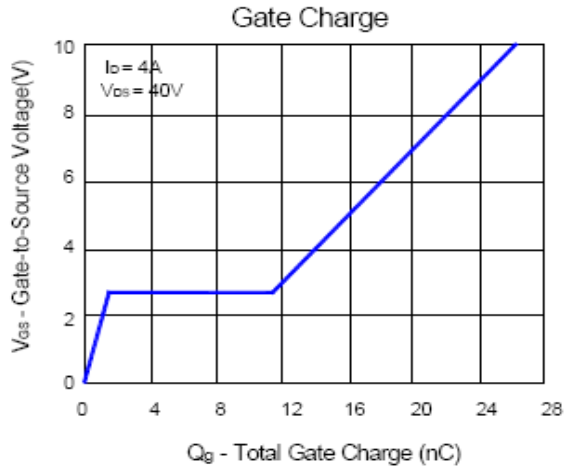

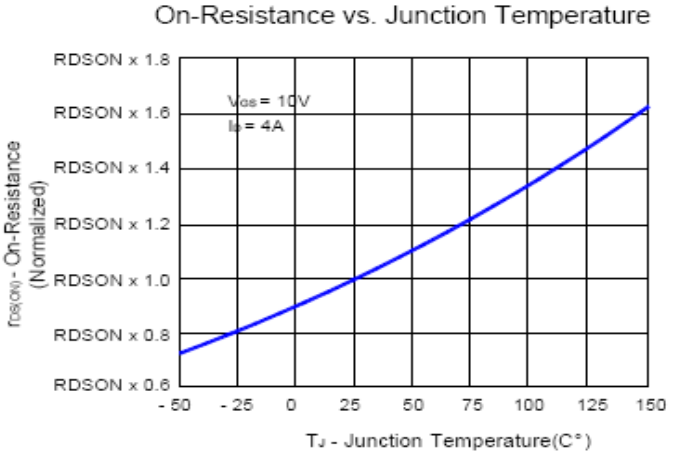

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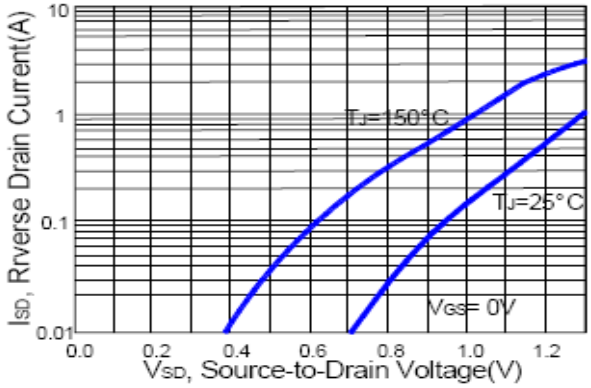
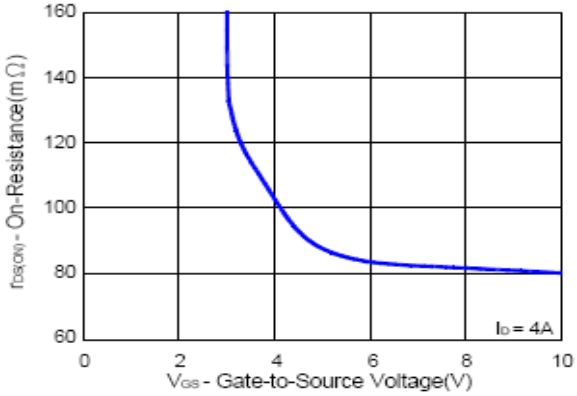
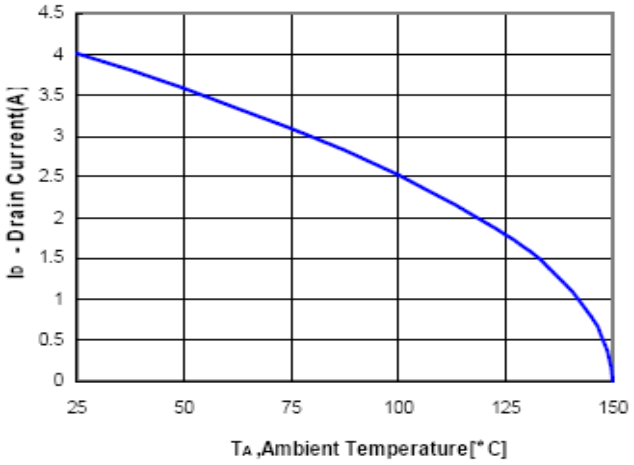
Typical Source-Drain Diode Forward Voltage

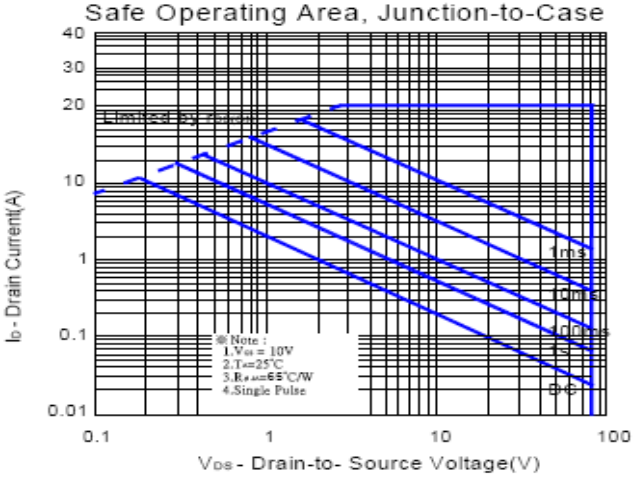


On-Resistance vs.Gate-to-Source Voltage

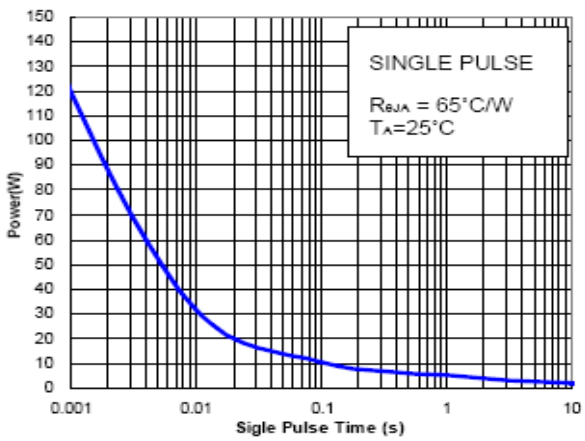




Safe Operating Area, Junction-to-Case



Single Pulse Maximun Power dissipation



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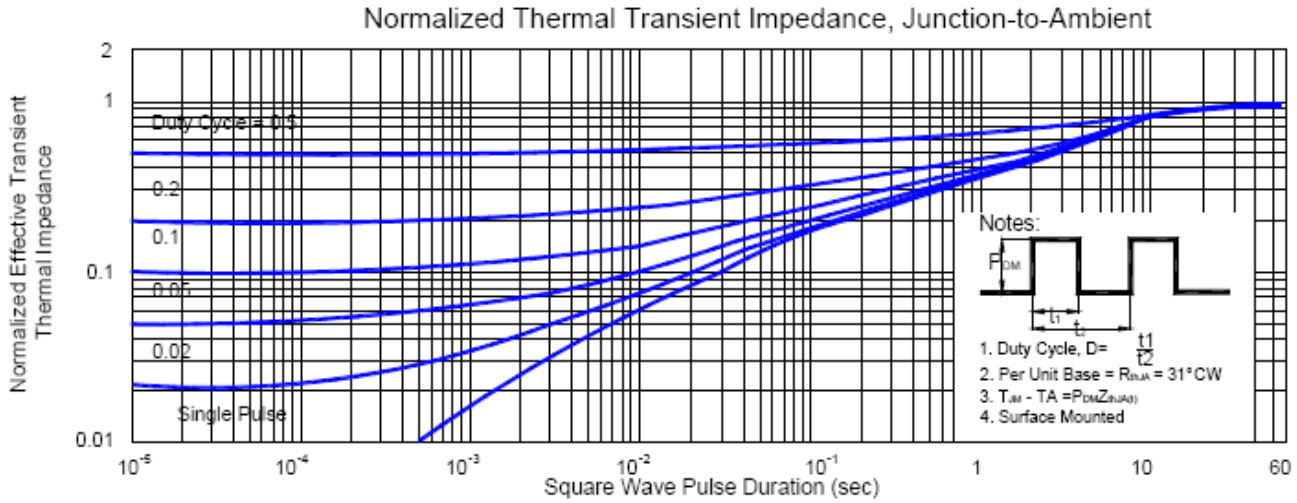

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Package Dimension

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