UNIKC Semiconductor

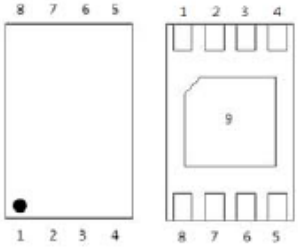
RoHS Compliant

PB560DZ

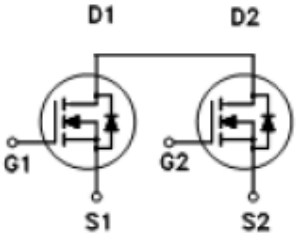
Dual N-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
20V	26mΩ @V_{GS} = 4.5V	7.8A



1:G1
2,3,4:S1
5,6,7:S2
8:G2
9:D1/D2



PDFN 2X3S

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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±8	V
Continuous Drain Current	T_A= 25 °C	I_D	7.8	A
	T_A = 70 °C		6.2	
Pulsed Drain Current[1]		I_{DM}	40	
Avalanche Current		I_{AS}	10	
Avalanche Energy[3]		E_{AS}	4.9	mJ
Power Dissipation	T_A = 25 °C	P_D	2.4	W
	T_A= 70 °C		1.5	
Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient[2]	$R_{\theta JA}$		52	°C / W

[1]Pulse width limited by maximum junction temperature.

[2]The value of $R_{\theta JA}$ is measured with the device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25° C.

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ELECTRICAL CHARACTERISTICS (T_J = 25 °C, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	20			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	0.5	0.6	1	
Gate-Body Leakage	I_{GSS}	V_{DS} = 0V, V_{GS} = ±8V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 16V, V_{GS} = 0V			1	μA
		V_{DS} = 10V, V_{GS} = 0V, T_J = 125 °C			10	
Drain-Source On-State Resistance[1]	$R_{DS(ON)}$	V_{GS} = 4.5V, I_D = 5A		19.2	26	mΩ
		V_{GS} = 3.7V, I_D = 4A		20	31	
		V_{GS} = 2.5V, I_D = 4A		23	33	
DYNAMIC						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} =10V, f = 1MHz		581		pF
Output Capacitance	C_{oss}			84		
Reverse Transfer Capacitance	C_{rss}			68		
Total Gate Charge[2]	Q_g	V_{GS} = 4.5 V, V_{DS} = 10V, I_D = 5A		8.4		nC
Gate-Source Charge[2]	Q_{gs}			0.8		
Gate-Drain Charge[2]	Q_{gd}			2.8		
Turn-On Delay Time[2]	$t_{d(on)}$	V_{DD} = 10V, $I_D \cong$ 5A, V_{GS} = 4.5V, R_{GS} = 6Ω		11.5		nS
Rise Time[2]	t_r			17		
Turn-Off Delay Time[2]	$t_{d(off)}$			30		
Fall Time[2]	t_f			9.5		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I_S				2.4	A
Forward Voltage[1]	V_{SD}	I_F = 5A, V_{GS} = 0V			1	V
Reverse Recovery Time	t_{rr}	I_F = 5A, dI_F/dt = 100A / μS		10		nS
Reverse Recovery Charge	Q_{rr}			2.4		nC

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

[2]Independent of operating temperature.

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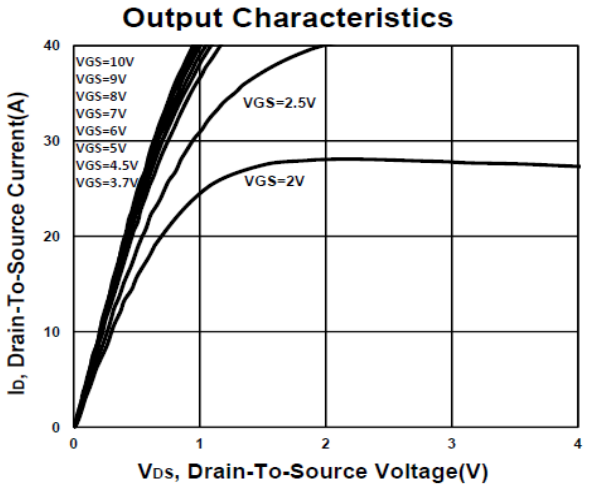

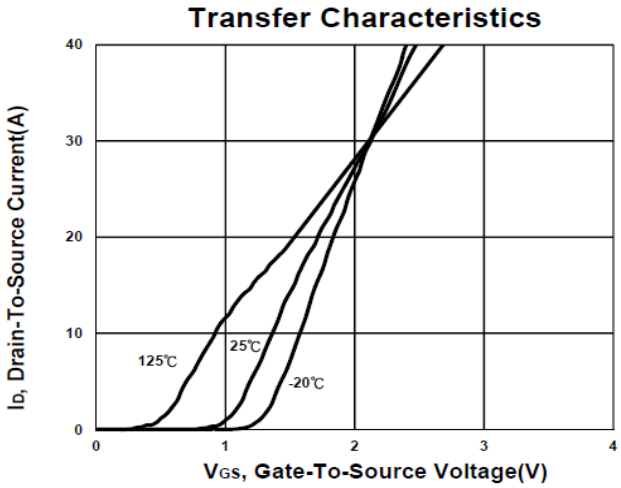

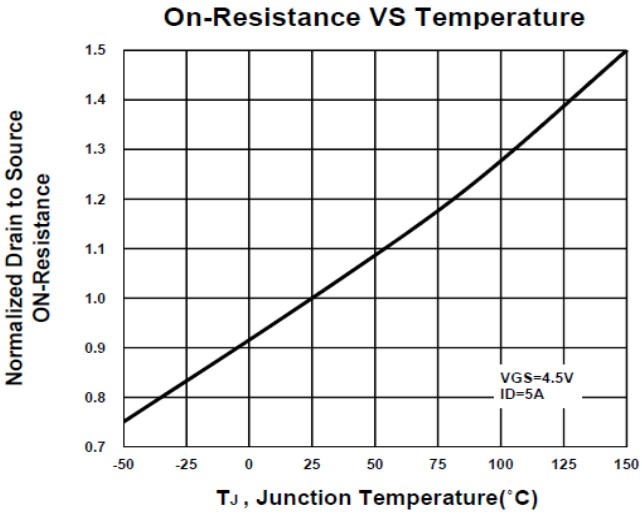

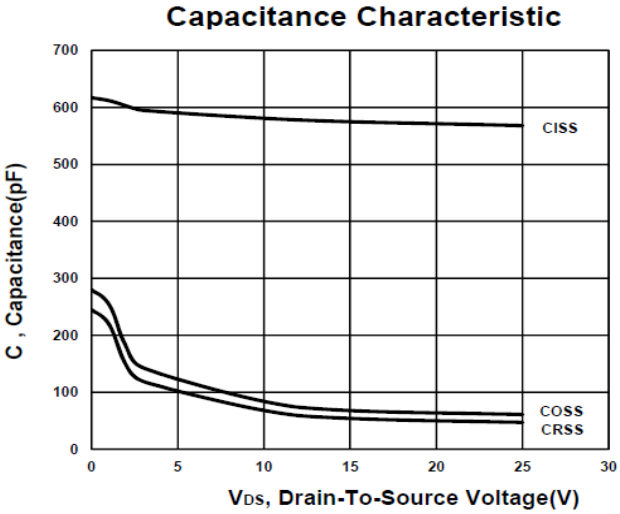

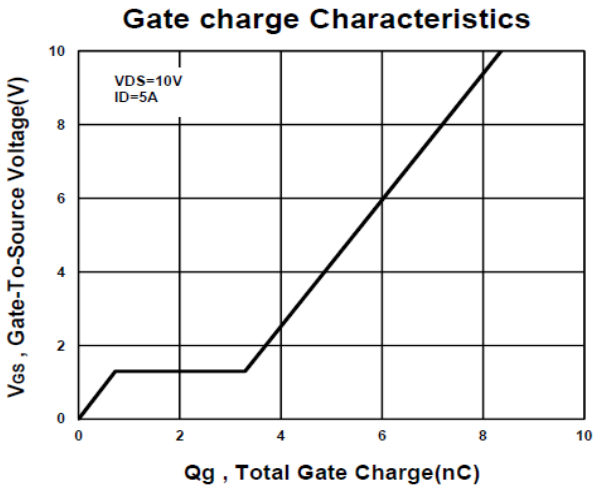

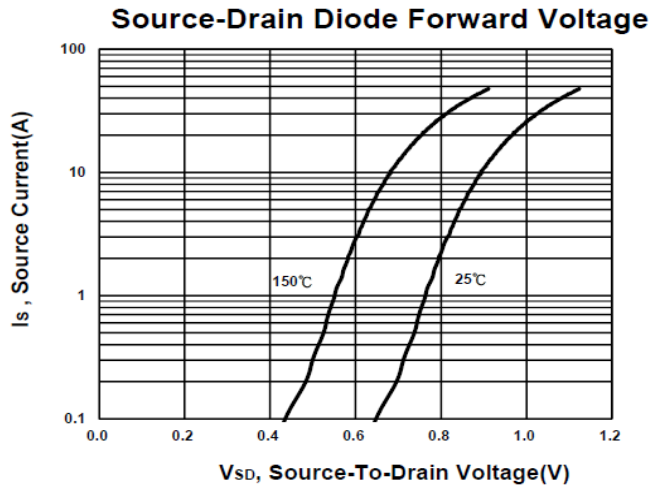

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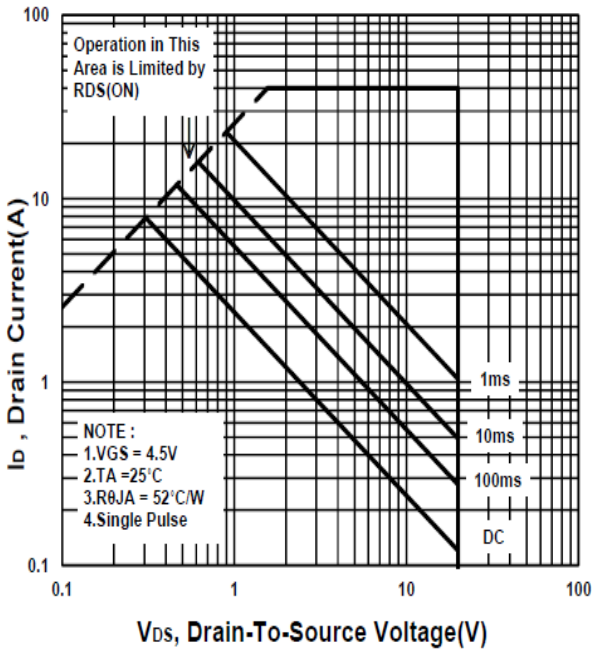
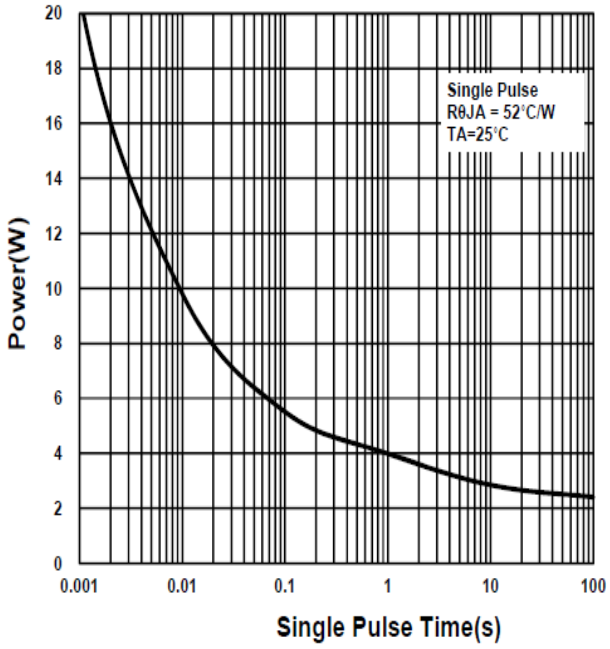
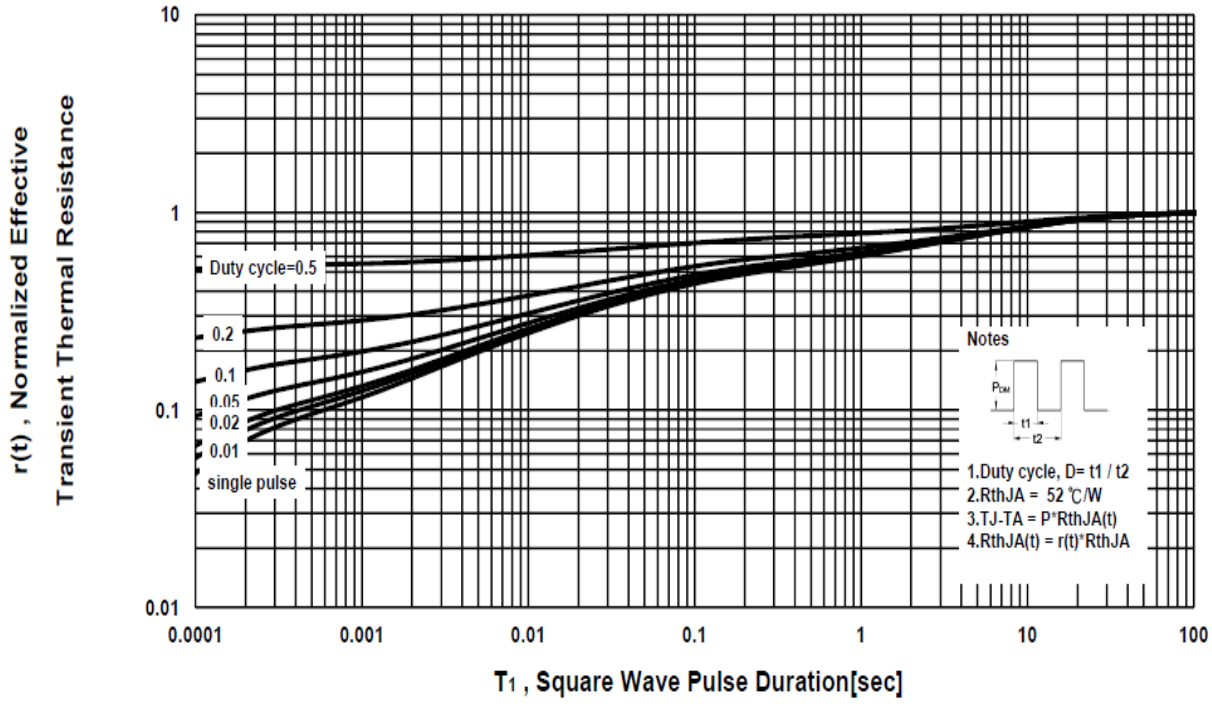
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



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Package Dimension

PDFN 2x3S MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	1.9		2.1	H		0.203	
B	2.9		3.1	I	0		0.05
C	0.7		0.9	J	0.4	0.5	0.6
D	1.4		1.6	K	0.2		0.3
E	1.4		1.7				
F	0.224		0.45				
G	0.2