UNIKC Semiconductor

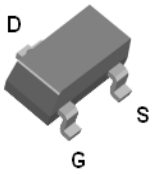
RoHS Compliant

P2B60AMA

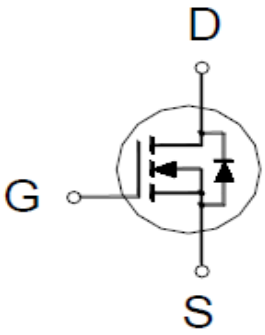
N-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
600V	200Ω @V_{GS} = 10V	40mA



SOT-23(S)



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		V_{GS}	±30	V
Continuous Drain Current	T_A = 25 °C	I_D	40	mA
	T_A = 70 °C		31	
Pulsed Drain Current[1]		I_{DM}	120	
Power Dissipation	T_A = 25 °C	P_D	0.7	W
	T_A = 70 °C		0.4	
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient	$R_{\theta JA}$		178	°C / W

[1]Pulse width limited by maximum junction temperature.

UNIKC Semiconductor

RoHS Compliant

P2B60AMA

N-Channel Enhancement Mode MOSFET

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	600			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	2	3.4	4	
Gate-Body Leakage	I_{GSS}	V_{DS} = 0V, V_{GS} = ±30V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 600V, V_{GS} = 0V			1	μA
		V_{DS} = 480V, V_{GS} = 0V , T_J = 55 °C			10	
Drain-Source On-State Resistance[1]	$R_{DS(ON)}$	V_{GS} = 10V, I_D = 16mA		110	200	Ω
Forward Transconductance[1]	g_{fs}	V_{DS} = 10V, I_D = 16mA		0.024		S
DYNAMIC						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 25V, f = 1MHz		16.6		pF
Output Capacitance	C_{oss}			8.5		
Reverse Transfer Capacitance	C_{rss}			3.4		
Total Gate Charge[2]	Q_g	V_{DS} = 480V,V_{GS} = 10V, I_D= 16mA		4.3		nC
Gate-Source Charge[2]	Q_{gs}			0.5		
Gate-Drain Charge[2]	Q_{gd}			3.2		
Turn-On Delay Time[2]	$t_{d(on)}$	V_{DD} = 300V I_D ≅ 16mA, V_{GEN} = 10V, R_G = 6Ω		19		nS
Rise Time[2]	t_r			15		
Turn-Off Delay Time[2]	$t_{d(off)}$			21		
Fall Time[2]	t_f			170		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICE (T_J = 25 ˚C)						
Continuous Current	I_S				38	mA
Forward Voltage[1]	V_{SD}	I_F = 16mA, V_{GS} = 0V			1.2	V
Reverse Recovery Time	t_{rr}	I_F = 16mA, dI_F/dt = 100A /μS		160		nS
Reverse Recovery Change	Q_{rr}			14		nC

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

[2]Independent of operating temperature.

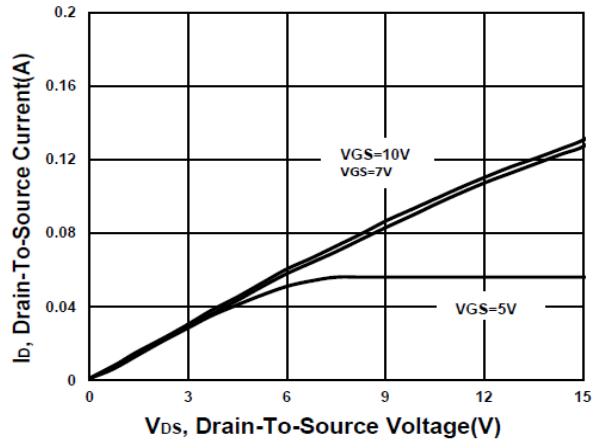
UNIKC Semiconductor

RoHS Compliant

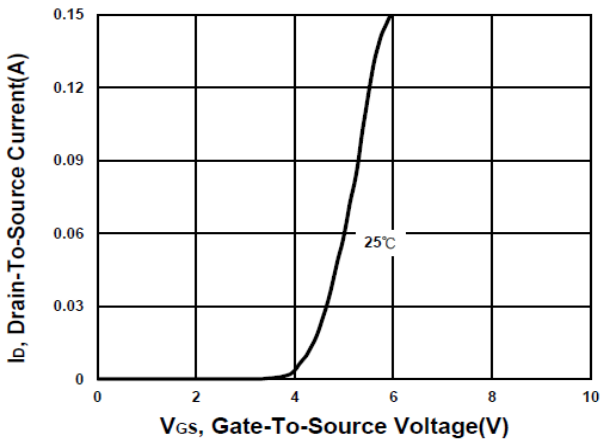
P2B60AMA

N-Channel Enhancement Mode MOSFET

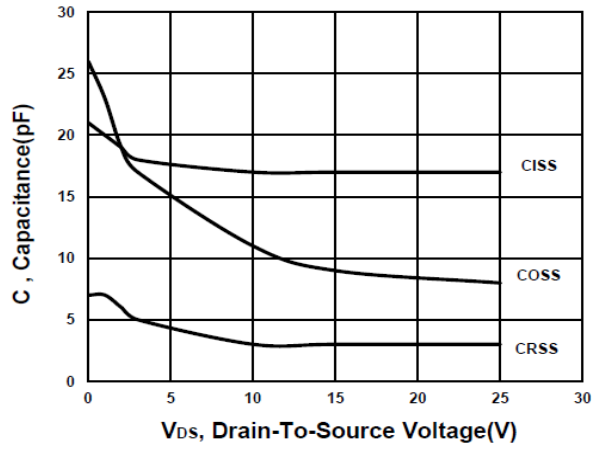
Output Characteristics



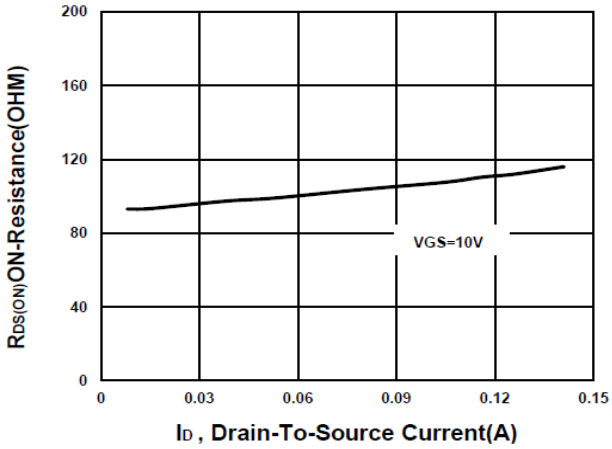
Transfer Characteristics



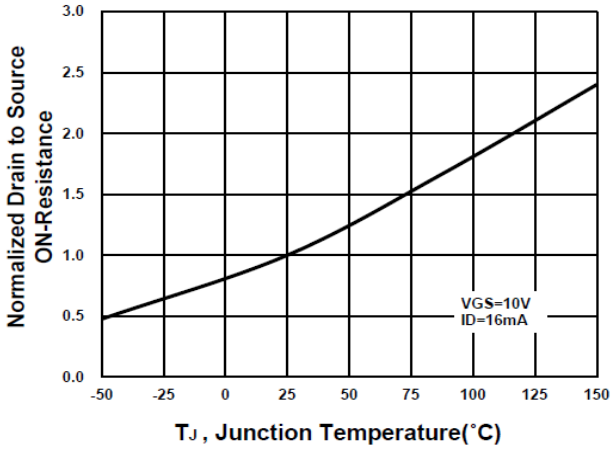
Capacitance Characteristic



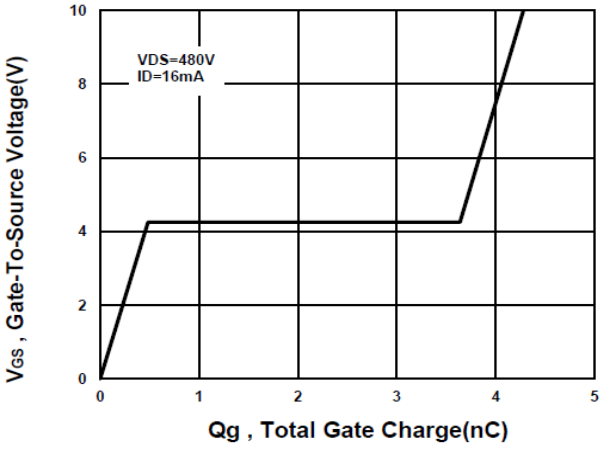
On-Resistance VS Drain Current



On-Resistance VS Temperature



Gate charge Characteristics



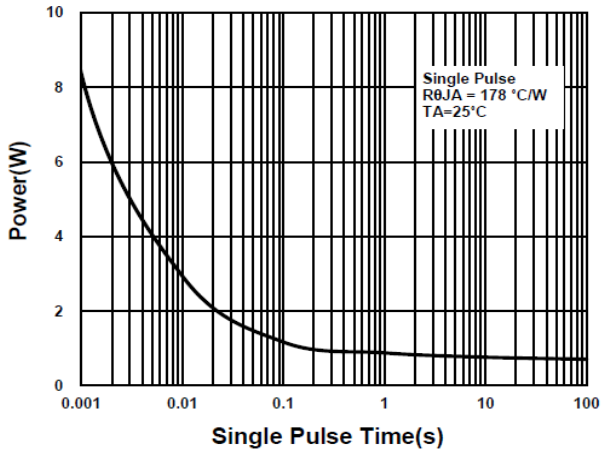
UNIKC Semiconductor

RoHS Compliant

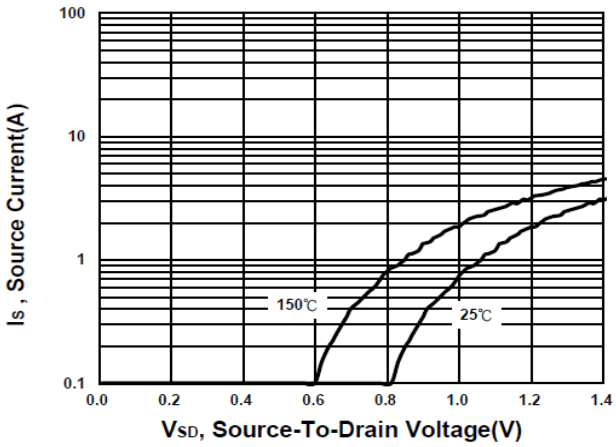
P2B60AMA

N-Channel Enhancement Mode MOSFET

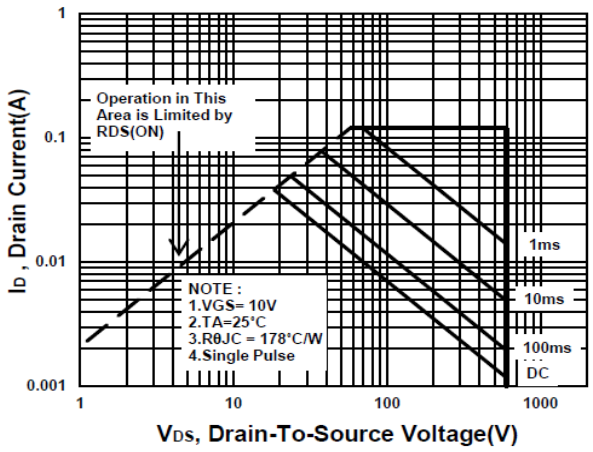
Single Pulse Maximum Power Dissipation



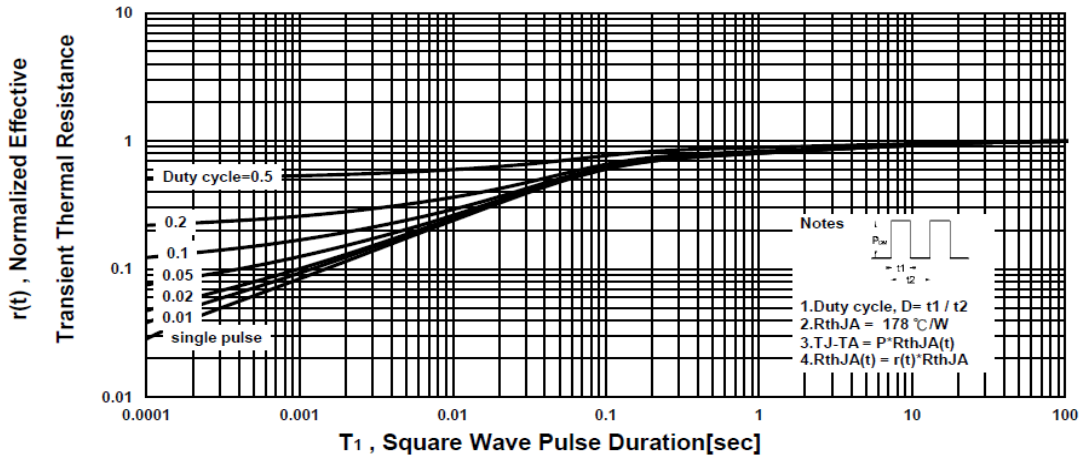
Source-Drain Diode Forward Voltage



Safe Operating Area



Transient Thermal Response Curve



UNIKC Semiconductor

P2B60AMA

N-Channel Enhancement Mode MOSFET

Package Dimension

SOT-23 (S) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	0.9		1	H	0.08		0.2
B	2.25		2.85	I	0.15		0.6
C	1.2		1.4				
D	2.8		3.04				
E	0.89		1.2				
F	0		0.1				
G	0.3		0.5