UNIKC
Semiconductor

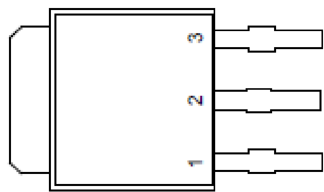
RoHS Compliant

P0460EIS

N-Channel Enhancement Mode MOSFET

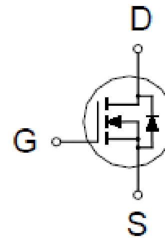
PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
600V	2.3Ω @V_{GS} = 10V	4A



1.GATE
2.DRAIN
3.SOURCE

TO-251(IS)



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	600	V
Gate-Source Voltage		V_{GS}	±30	
Continuous Drain Current[2]	T_C = 25 °C	I_D	4	A
	T_C = 100 °C		2.5	
Pulsed Drain Current[1,2]		I_{DM}	20	
Avalanche Current[3]		I_{AS}	4	
Avalanche Energy[3]		E_{AS}	80	mJ
Power Dissipation	T_C = 25 °C	P_D	62.5	W
	T_C = 100 °C		25	
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		2	°C / W
Junction-to-Ambient	$R_{\theta JA}$		62.5	

[1]Pulse width limited by maximum junction temperature.

[2]Limited only by maximum temperature allowed

[3]V_{DD} = 50V , L = 10mH ,starting T_J = 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	600			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	2	3.2	4	V
Gate-Body Leakage	I_{GSS}	V_{DS} = 0V, V_{GS} = ±30V			±100	nA
Gate Voltage Drain Current	I_{DSS}	V_{DS} = 600V, V_{GS} = 0V, T_C = 25 °C			1	μA
		V_{DS} = 480V, V_{GS} = 0V , T_C = 100 °			10	μA
Drain-Source On-State Resistance[1]	$R_{DS(ON)}$	V_{GS} = 10V, I_D = 2A		1.85	2.3	Ω
Forward Transconductance[1]	g_{fs}	V_{DS} = 15V, I_D = 2A		5.8		S
DYNAMIC						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 25V, f = 1MHz		517		pF
Output Capacitance	C_{oss}			62		pF
Reverse Transfer Capacitance	C_{rss}			11		pF
Total Gate Charge[2]	Q_g	V_{DD} = 480V, I_D = 4A,V_{GS}= 10V		18		nC
Gate-Source Charge[2]	Q_{gs}			2.8		nC
Gate-Drain Charge[2]	Q_{gd}			8.3		nC
Turn-On Delay Time[2]	$t_{d(on)}$	V_{DD} = 300V, I_D = 4A, V_{GS} = 10V, R_G = 25Ω		18		nS
Rise Time[2]	t_r			46		nS
Turn-Off Delay Time[2]	$t_{d(off)}$			46		nS
Fall Time[2]	t_f			50		nS
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current[3]	I_S				4	A
Forward Voltage[1]	V_{SD}	I_F = 4A, V_{GS} = 0V			1.5	V
Reverse Recovery Time	t_{rr}	I_F = 4A, dI_F/dt = 100A / μS		383		nS
Reverse Recovery Charge	Q_{rr}			2.2		uC

[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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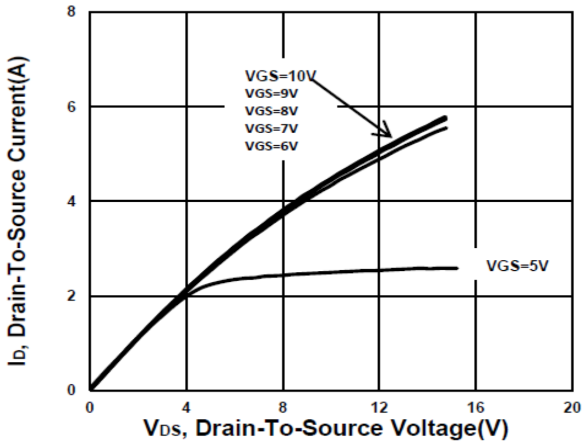

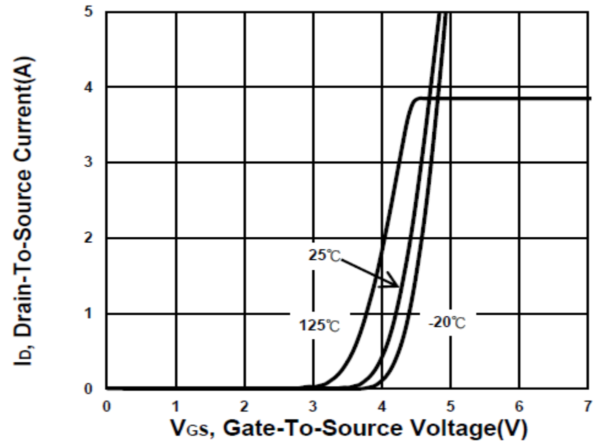

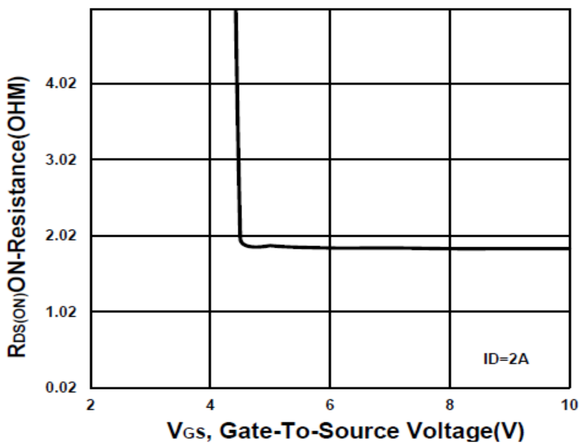

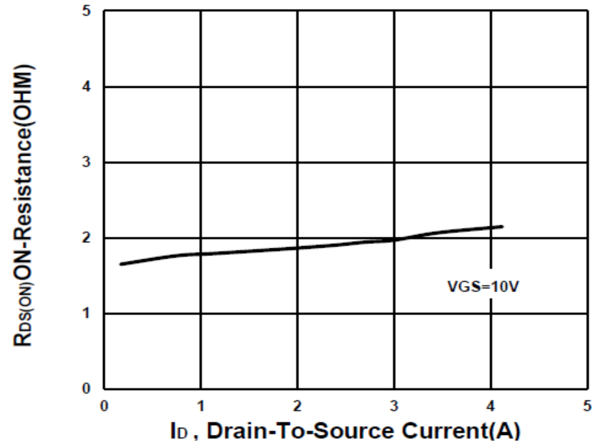

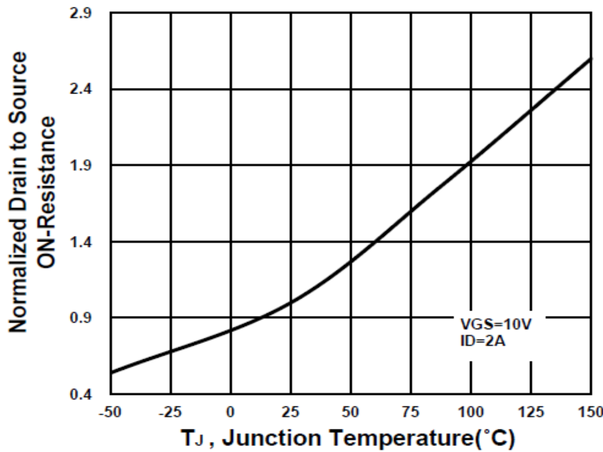

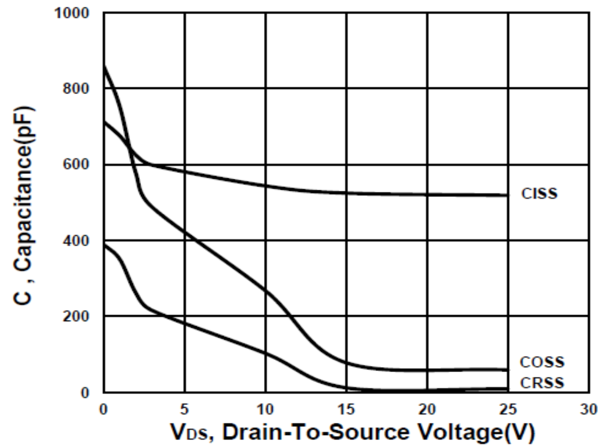

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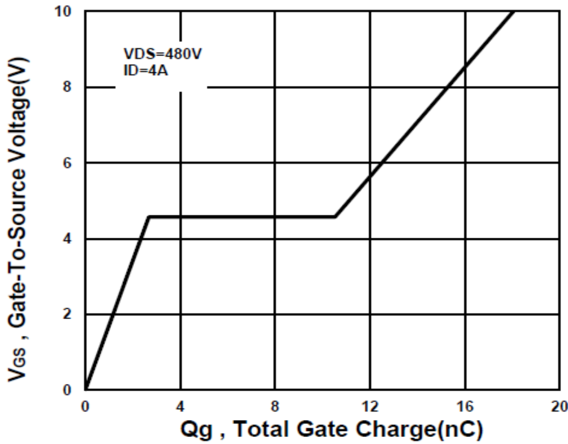

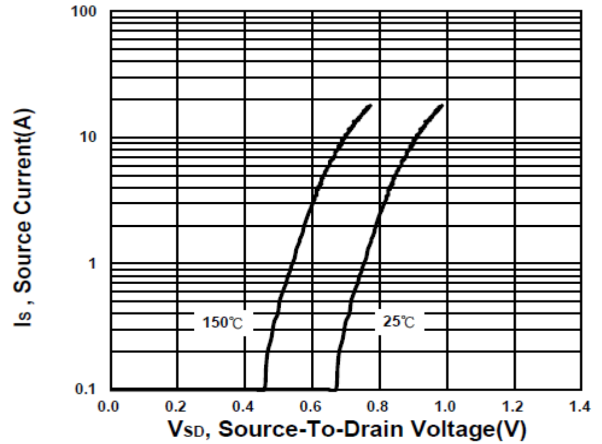

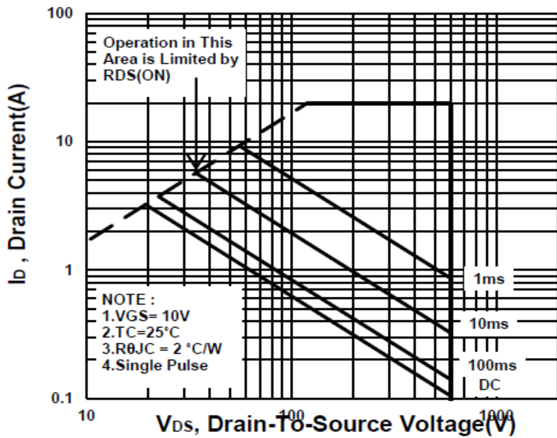

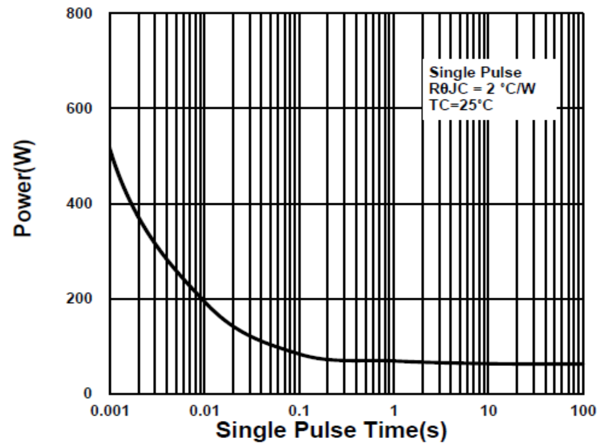

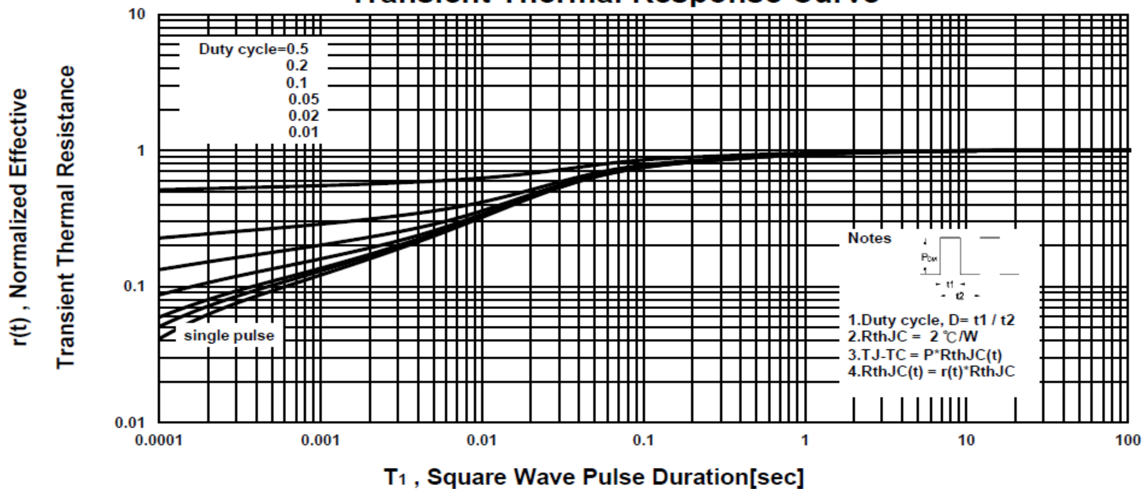

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Package Dimension

TO-251 (IS) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	6.3	6.6	6.8	H	2.1	2.3	2.5
B	4.8	5.3	5.5	J	0.4	0.5	0.6
C	6.7		7.57	K	0.35	0.5	0.65
D	3	3.5	4.5	L	0.9		1.5
E		2.3		M	5.3		6.22
F	0.6	0.9	1.1	N	1.4	1.6	2.1
G	0.4		0.89