UNIKC Semiconductor

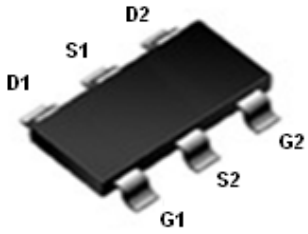
RoHS Compliant

P6002OAG

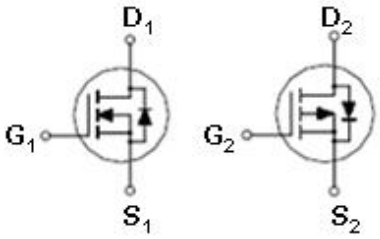
N&P-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D	Channel
20V	60mΩ @V_{GS} = 4.5V	3.4A	N
-20V	115mΩ @V_{GS} = -4.5V	-2.5A	P



TSOP-6



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

PARAMETERS/TEST CONDITIONS		SYMBOL	CH.	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	N	20	V
			P	-20	
Gate-Source Voltage		V_{GS}	N	±8	
			P	±8	
Continuous Drain Current	T_A = 25 °C	I_D	N	3.4	A
			P	-2.5	
	T_A = 70 °C		N	2.7	
			P	-2	
Pulsed Drain Current[1]		I_{DM}	N	15	
			P	-15	
Avalanche Current[1]		I_{AS}	N	5.5	
			P	-12	
Avalanche Energy	L = 0.1mH	E_{AS}	N	1.5	mJ
			P	7.4	
Power Dissipation	T_A = 25 °C	P_D	N	1.14	W
			P	1.14	
	T_A = 70 °C		N	0.72	
			P	0.72	
Junction & Storage Temperature Range		T_J, T_{STG}		-55 to 150	°C

UNIKC Semiconductor

RoHS Compliant

P6002OAG

N&P-Channel Enhancement Mode MOSFET

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE		SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient	t ≤ 10s	$R_{\theta JA}$		110	°C / W
Junction-to-Ambient	Steady-State	$R_{\theta JA}$		150	
Junction-to-Lead	Steady-State	$R_{\theta JC}$		80	

[1]Pulse width limited by maximum junction temperature.

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

PARAMETER	SYMBOL	TEST CONDITIONS	CH.	LIMITS			UNITS
				MIN	TYP	MAX	
STATIC							
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	N	20			V
		V_{GS} = 0V, I_D = -250μA	P	-20			
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	N	0.4	0.75	1.3	
		V_{DS} = V_{GS}, I_D = -250μA	P	-0.4	-0.75	-1.3	
Gate-Body Leakage	I_{GSS}	V_{DS} = 0V, V_{GS} = ±8V	N			±100	nA
		V_{DS} = 0V, V_{GS} = ±8V	P			±100	
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 16V, V_{GS} = 0V	N			1	μA
		V_{DS} = -16V, V_{GS} = 0V	P			-1	
		V_{DS} = 10V, V_{GS} = 0V, T_J = 55 °C	N			10	
		V_{DS} = -10V, V_{GS} = 0V, T_J = 55 °C	P			-10	
On-State Drain Current[1]	$I_{D(ON)}$	V_{DS} = 5V, V_{GS} = 10V	N	15			A
		V_{DS} = -5V, V_{GS} = -10V	P	-15			
Drain-Source On-State Resistance[1]	$R_{DS(ON)}$	V_{GS} = 1.8V, I_D = 2A	N		90	140	mΩ
		V_{GS} = -1.8V, I_D = -1A	P		171	300	
		V_{GS} = 2.5V, I_D = 3A	N		63	85	
		V_{GS} = -2.5V, I_D = -2A	P		118	180	
		V_{GS} = 4.5V, I_D = 3.6A	N		47	60	
		V_{GS} = -4.5V, I_D = -3.1A	P		85	115	
Forward Transconductance[1]	g_{fs}	V_{DS} = 5V, I_D = 3.6A	N		6		S
		V_{DS} = -5V, I_D = -3.1A	P		11		

UNIKC Semiconductor

RoHS Compliant

P6002OAG

N&P-Channel Enhancement Mode MOSFET

DYNAMIC							
Input Capacitance	C_{iss}	N-Channel V_{GS} = 0V, V_{DS} = 15V, f = 1MHz	N		263		pF
			P		415		
Output Capacitance	C_{oss}		N		128		
		P-Channel V_{GS} = 0V, V_{DS} = -15V, f = 1MHz	P		126		
Reverse Transfer Capacitance	C_{rss}		N		87		
			P		78		
Gate Resistance	R_g	V_{GS} = 0V, V_{DS} = 0V, f = 1M Hz	N		1.65		Ω
			P		6.1		
Total Gate Charge[2]	Q_g	N-Channel V_{DS} = 0.5$V_{(BR)DSS}$, V_{GS} = 4.5V, I_D = 3.6A	N		4		nC
			P		4		
Gate-Source Charge[2]	Q_{gs}		N		0.5		
		P-Channel V_{DS} = 0.5$V_{(BR)DSS}$, V_{GS} = 4.5V, I_D = -3.1A	P		1		
Gate-Drain Charge[2]	Q_{gd}		N		1.6		
			P		1.1		
Turn-On Delay Time[2]	$t_{d(on)}$	N-Channel V_{DS} = 15V $I_D \cong$ 3.6A, V_{GS} = 10V, R_{GEN} = 6Ω	N		6		nS
			P		10		
Rise Time[2]	t_r		N		7		
			P		12		
Turn-Off Delay Time[2]	$t_{d(off)}$	P-Channel V_{DS} = -15V, R_L = 1Ω $I_D \cong$ -3.1A, V_{GS} = -10V, R_{GEN} = 6Ω	N		40		
			P		44		
Fall Time[2]	t_f		N		13		
			P		22		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)							
Continuous Current	I_S		N			0.95	A
			P			-0.95	
Forward Voltage[1]	V_{SD}	I_F = 3.6A, V_{GS} = 0V	N			1.2	V
		I_F = -3.1A, V_{GS} = 0V	P			-1.2	
Reverse Recovery Time	t_{rr}	I_F = 3.6A, dI_F/dt = 100A / μS	N		14		nS
		I_F = -3.1A, dI_F/dt = 100A / μS	P		25		
Reverse Recovery Charge	Q_{rr}		N		4		nC
			P		8		

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

[2]Independent of operating temperature.

UNIKC Semiconductor

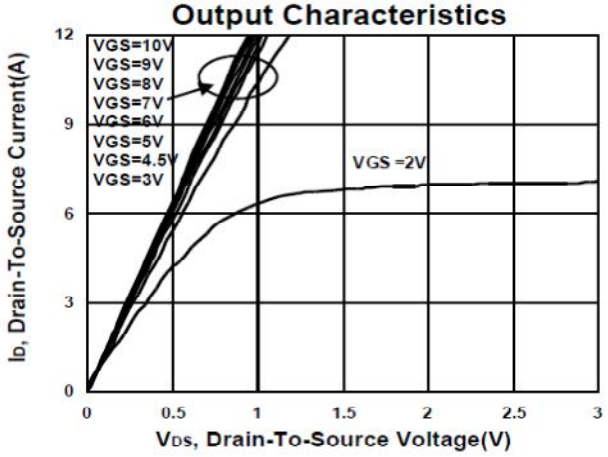
RoHS Compliant

P6002OAG

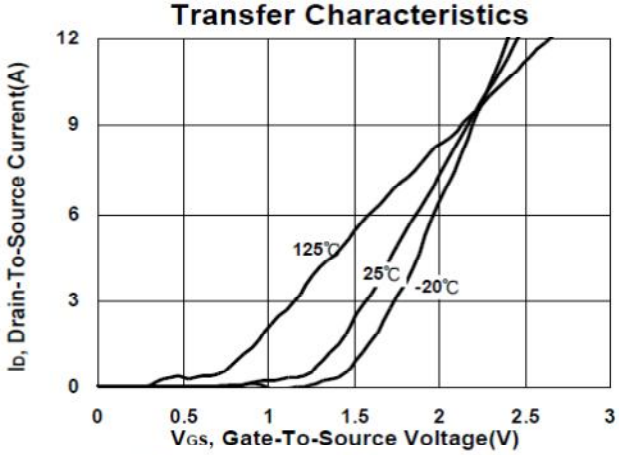
N&P-Channel Enhancement Mode MOSFET

TYPICAL PERFORMANCE CHARACTERISTICS
N-CHANNEL

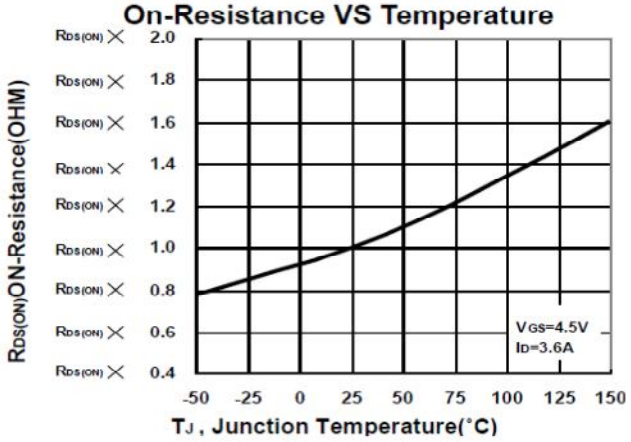
Output Characteristics



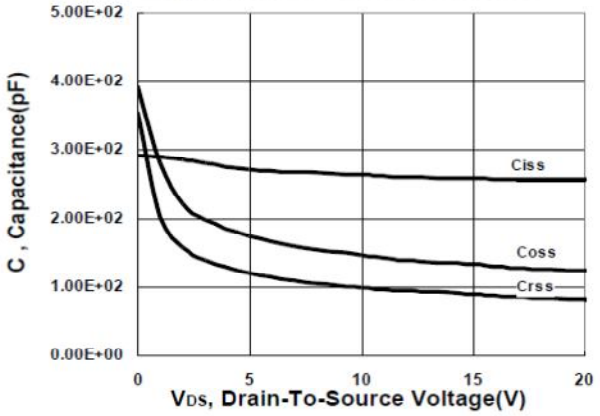
Transfer Characteristics



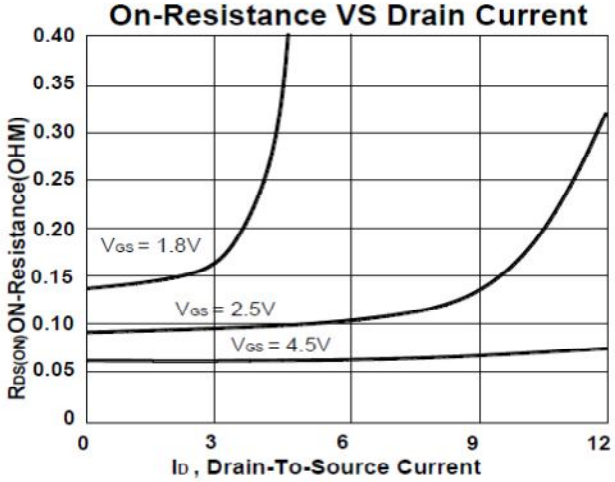
On-Resistance VS Temperature



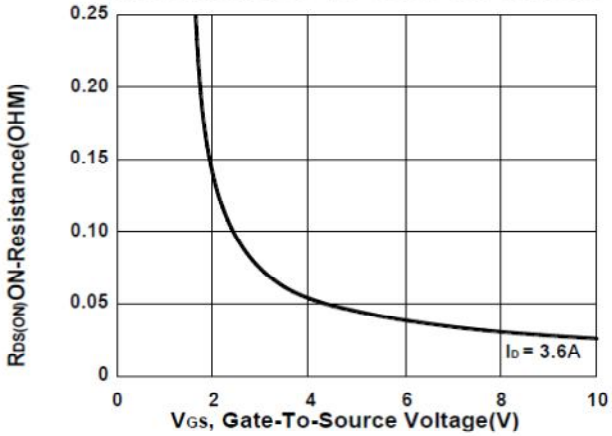
Capacitance Characteristic



On-Resistance VS Drain Current



On-Resistance VS Gate-To-Source

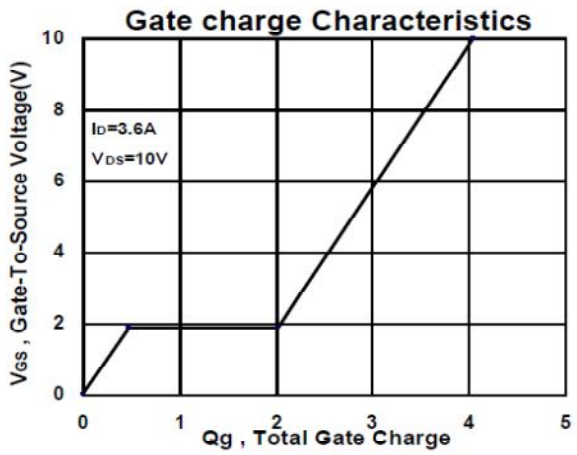


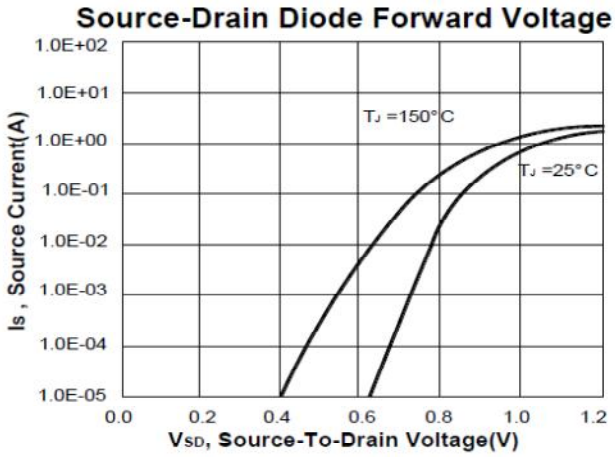
UNIKC Semiconductor

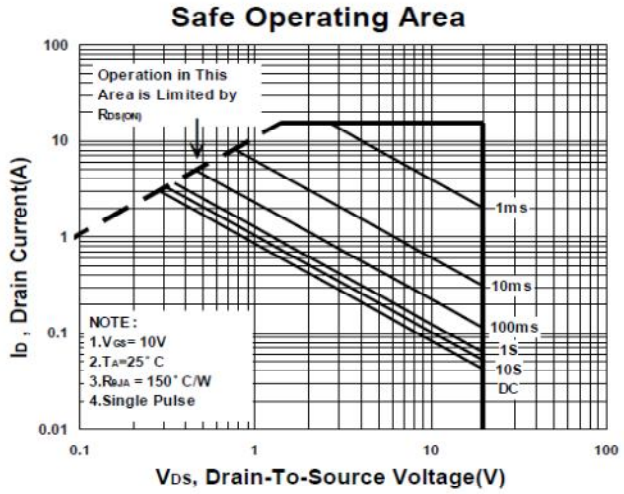
RoHS Compliant

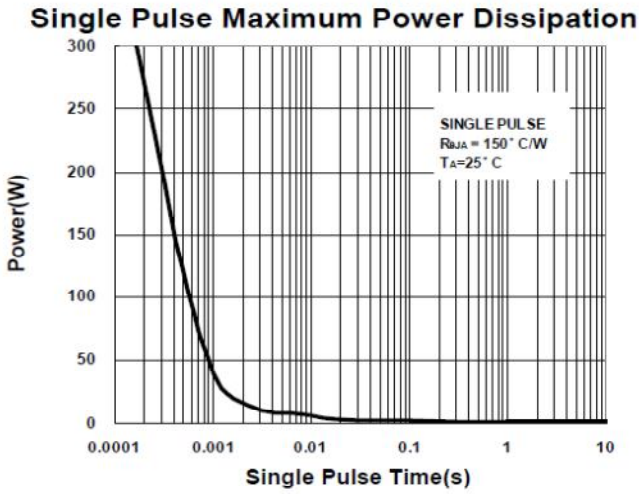
P6002OAG

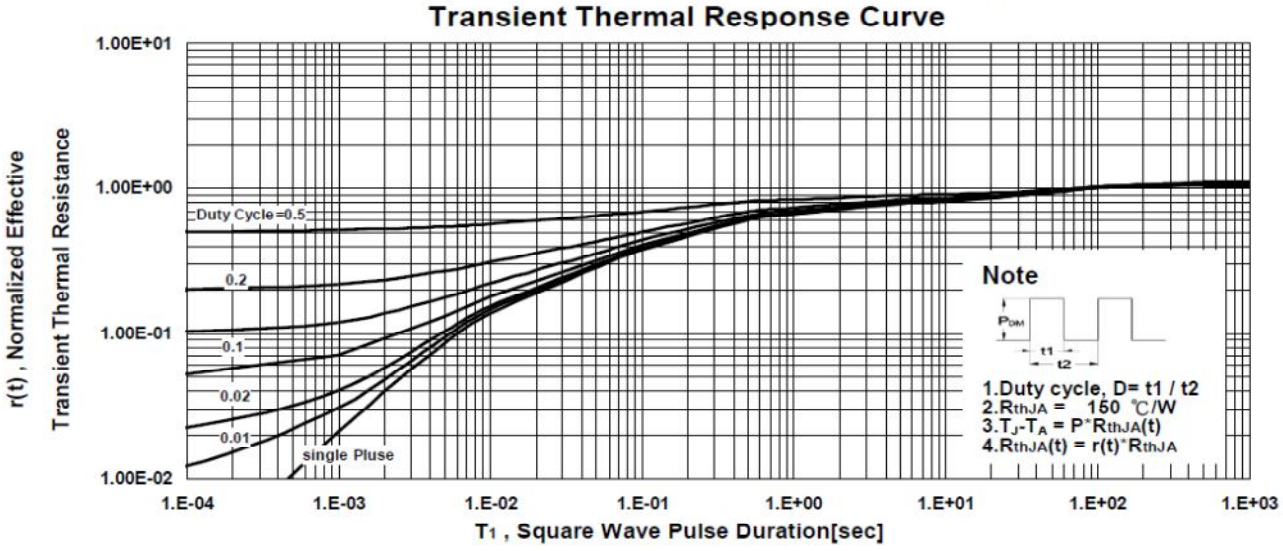
N&P-Channel Enhancement Mode MOSFET











UNIKC Semiconductor

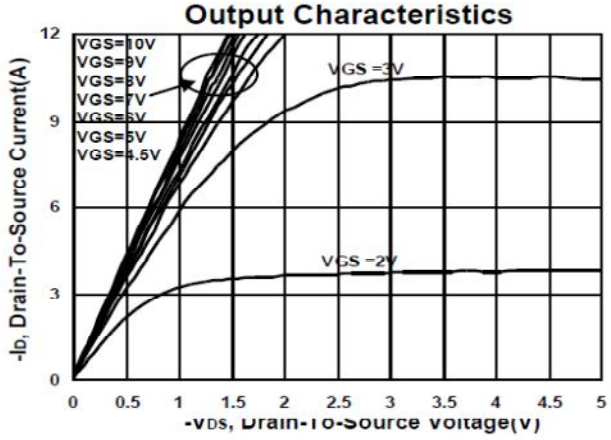
RoHS Compliant

P6002OAG

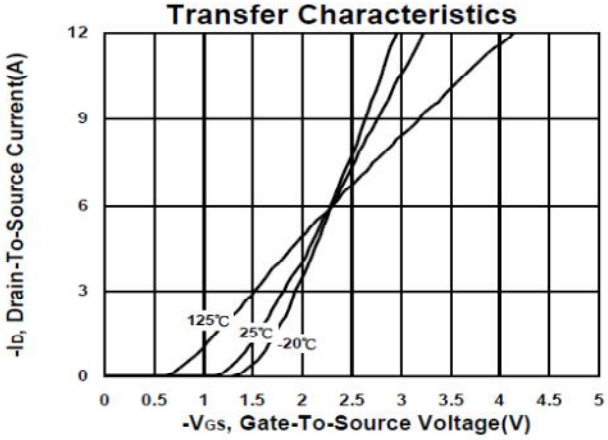
N&P-Channel Enhancement Mode MOSFET

TYPICAL PERFORMANCE CHARACTERISTICS
P-CHANNEL

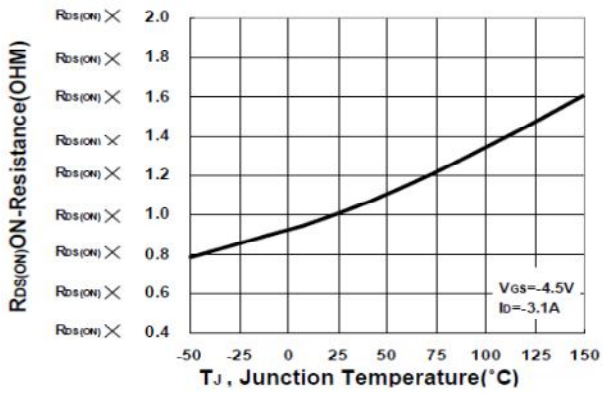
Output Characteristics



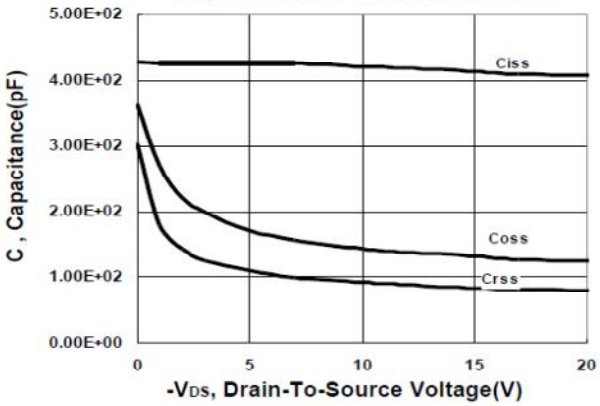
Transfer Characteristics



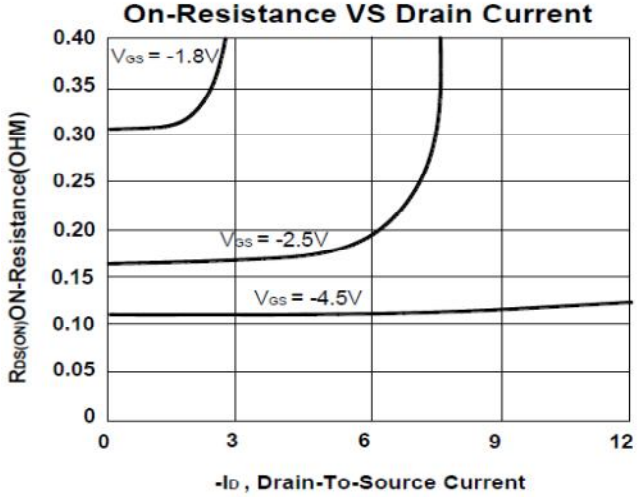
On-Resistance VS Temperature



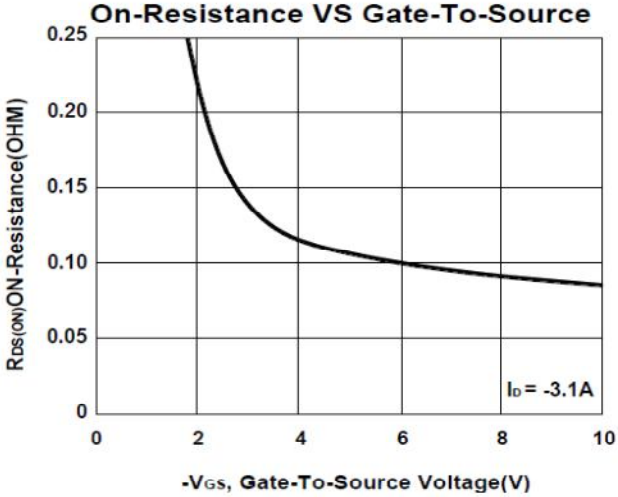
Capacitance Characteristic



On-Resistance VS Drain Current



On-Resistance VS Gate-To-Source

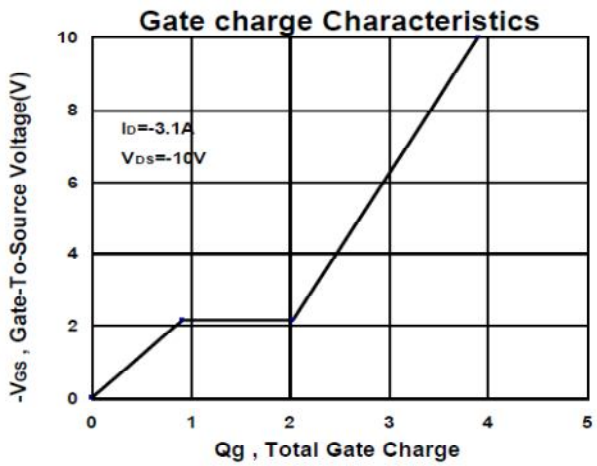


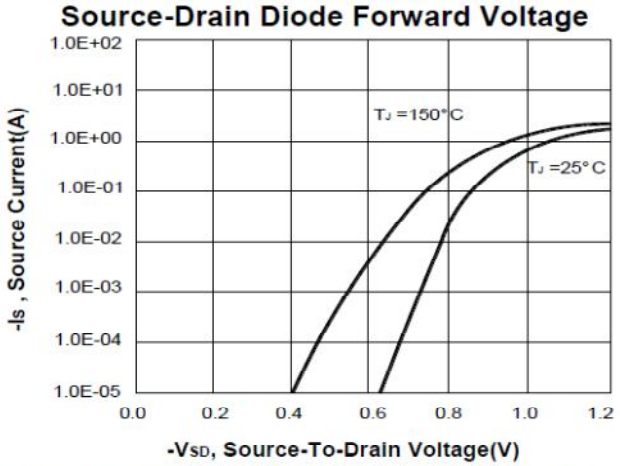
UNIKC Semiconductor

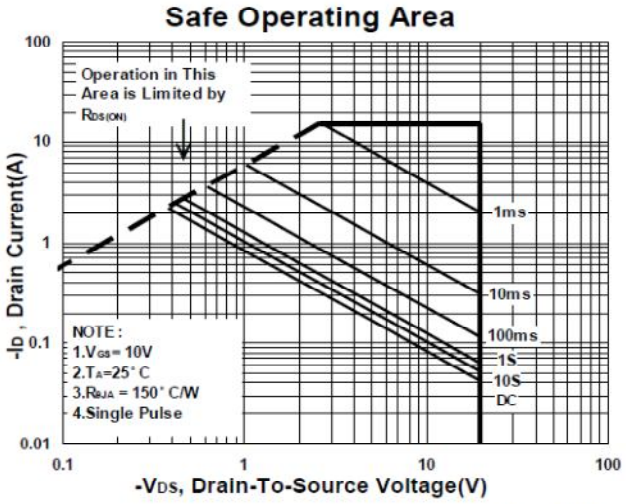
RoHS Compliant

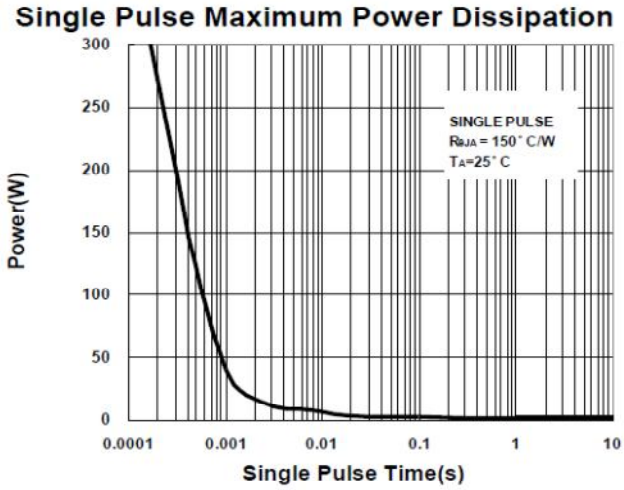
P6002OAG

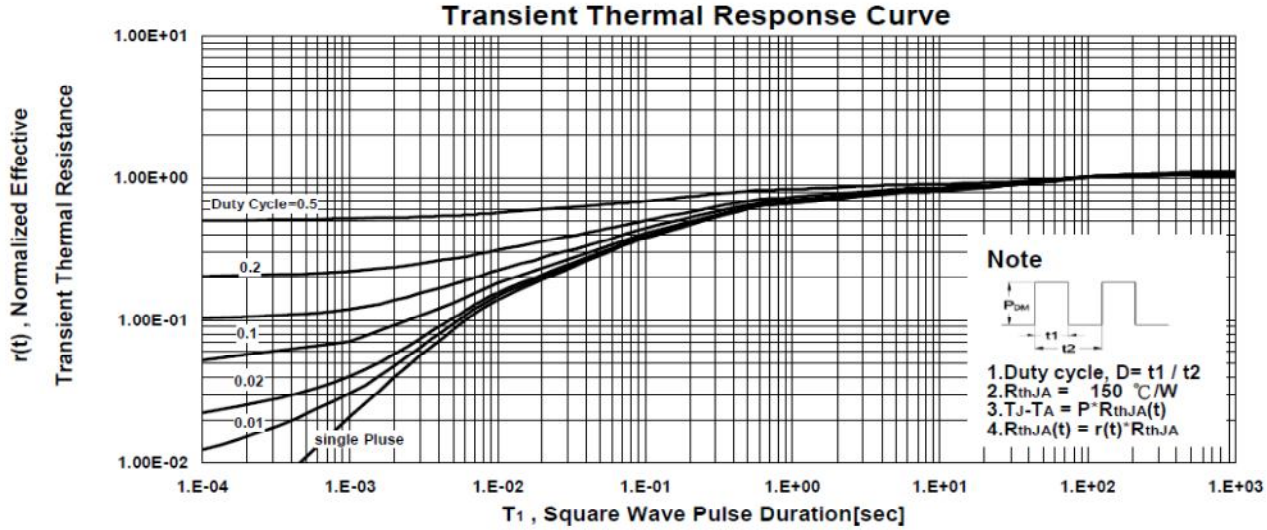
N&P-Channel Enhancement Mode MOSFET











UNIKC Semiconductor

RoHS Compliant

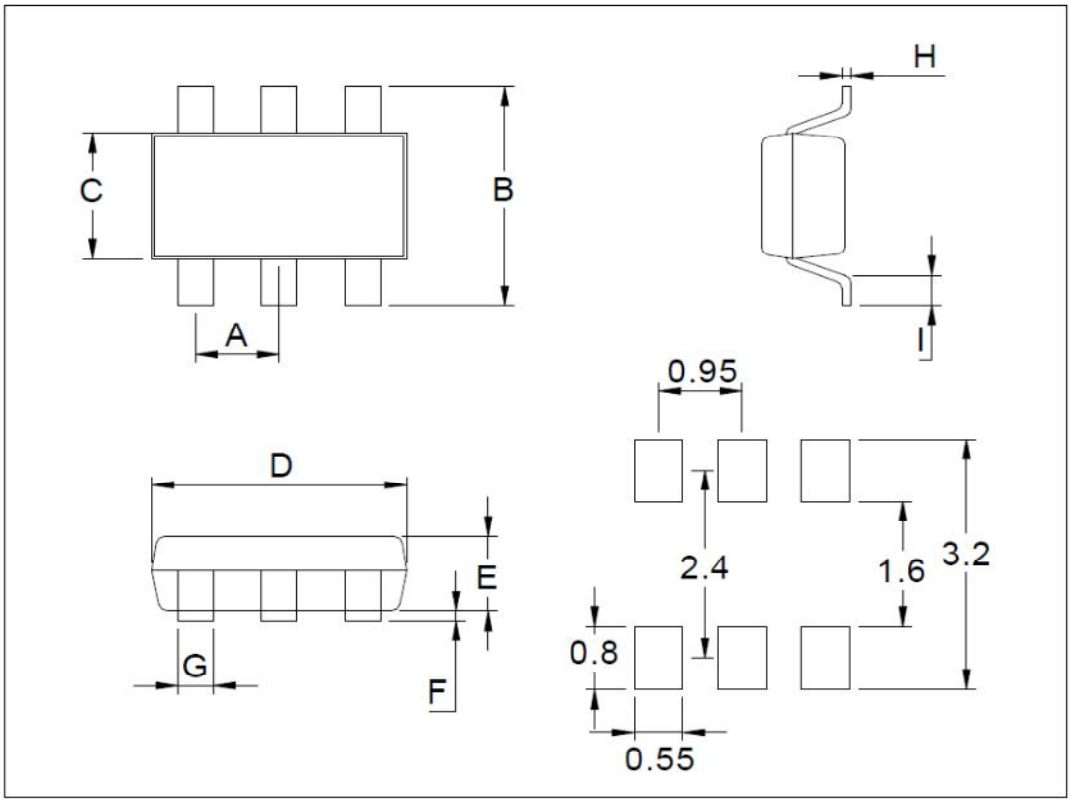
P6002OAG

N&P-Channel Enhancement Mode MOSFET

Package Dimension

TSOP- 6 MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	0.9		1	H	0.08		0.2
B	2.6		3	I	0.33		0.57
C	1.5		1.7	J			
D	2.8		3.02	K			
E	0.7		0.85	L			
F	0		0.1	M			
G	0.35		0.5	N			



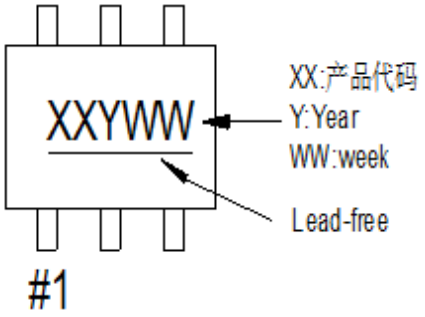
UNIKC Semiconductor

RoHS Compliant

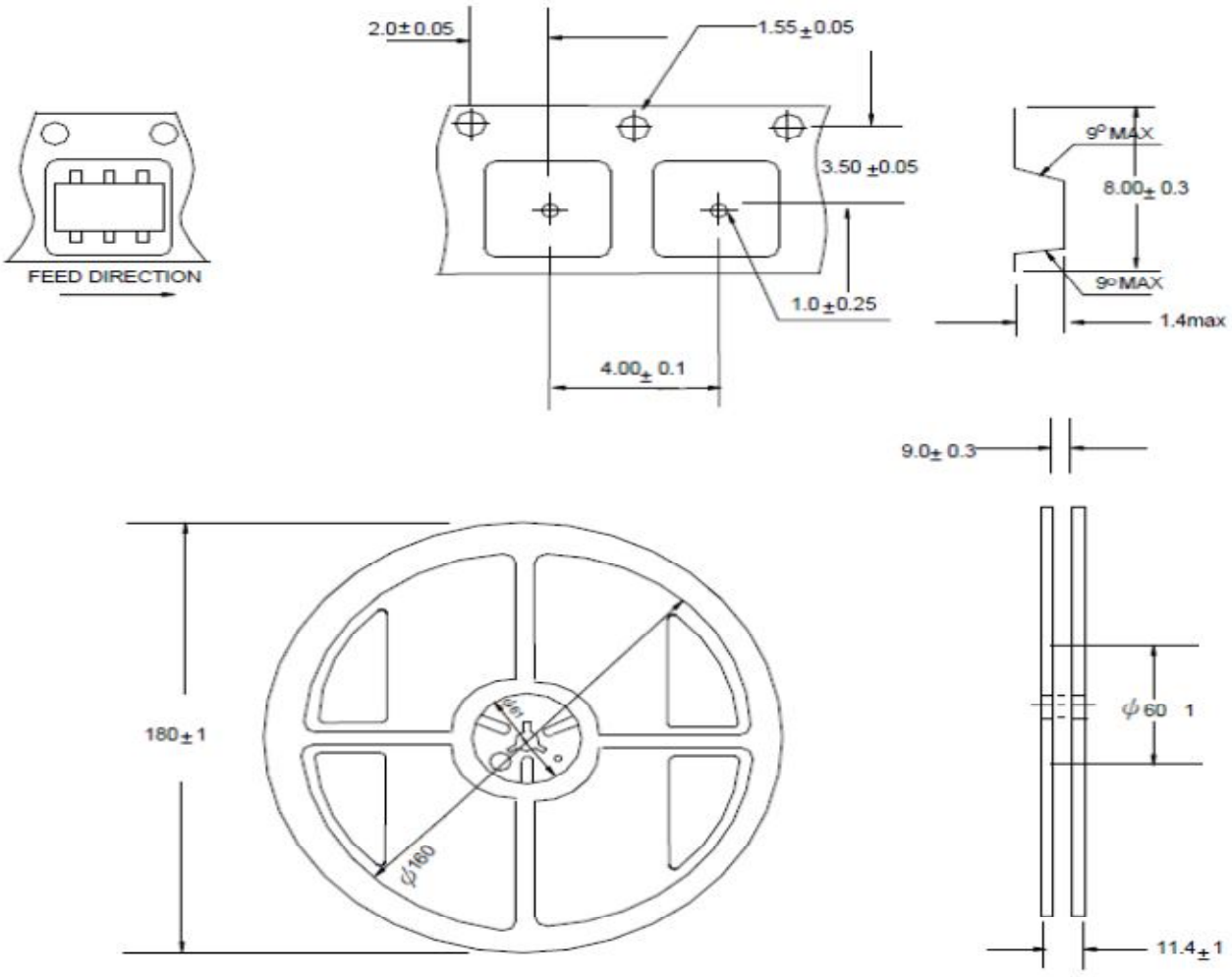
P6002OAG

N&P-Channel Enhancement Mode MOSFET

A. Marking Information(产品代码为：52）

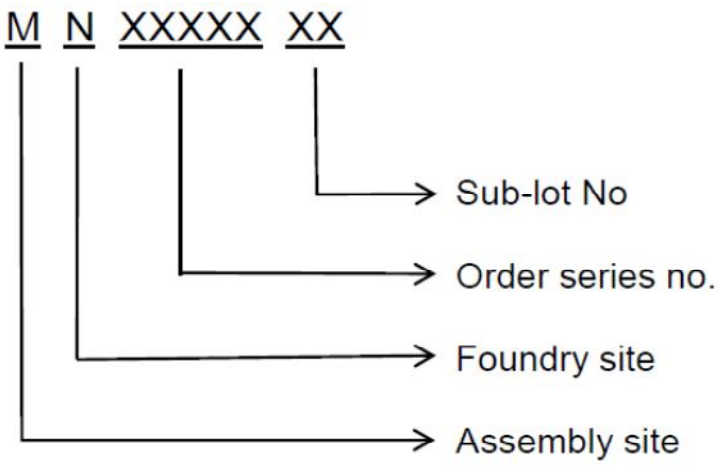


B. Tape&Reel Information: 3000pcs/Reel

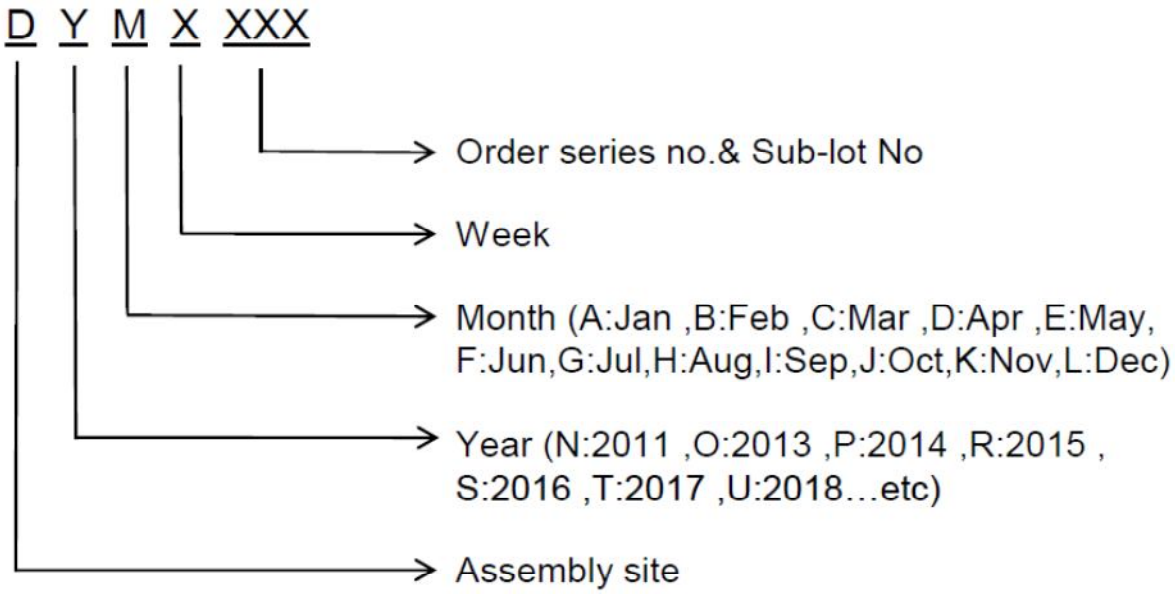


C. Lot No.&Date Code rule

1.Lot No.



2.Date Code



UNIKC Semiconductor

RoHS Compliant

P6002OAG

N&P-Channel Enhancement Mode MOSFET

D.Label rule

标签内容(Label content)

1	Label Size	30 * 90 mm
2	Font style	Times New Roman or Arial (或可区分英文”0”和数字”0”，”G和”Q”的字型即可)
3	Great Power	Height: 4 mm
4	Package	Height: 2 mm
5	Date	Height: 2 mm Shipping date: YYYY/MM/DD, ex. 2008/09/12
6	Device	Height: 3 mm (Max: 16 Digit)
7	Lot	Height: 3 mm (Max: 9 Digit) Sub lot
8	D/C	Height: 3 mm (Max: 7 Digit)
9	QTY	Height: 3 mm (Max: 6 Digit) Thousand mark is no needed
10	Pb Free label	Diameter: 1 cm bottom color: Green Font color: Black Font style: Arial
11	Halogen Free label	Diameter: 1 cm bottom color: Green Font color: Black Font style: Arial
12	Scan info	Device / Lot / D/C / QTY , Insert “ / “ between every parts. for example: P3055LDG/G12345601/GGG2301/2000 DPI (Dots per inch): Over 300 dpi Code : Code 128 Height: 6 mm at least