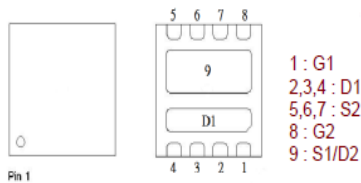


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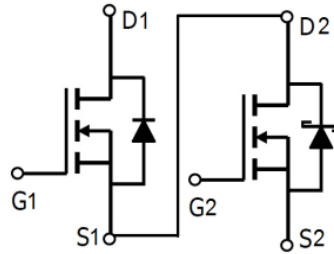
Dual N-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

	$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
Q2	30V	7mΩ @ $V_{GS} = 10V$	39A
Q1	30V	10.5mΩ @ $V_{GS} = 10V$	31A



PDFN 3X3S



ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ °C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS	SYMBOL	Q2	Q1	UNITS	
Drain-Source Voltage	V_{DS}	30	30	V	
Gate-Source Voltage	V_{GS}	±20	±20		
Continuous Drain Current ³	$T_C = 25\text{ °C}$	39	31	A	
	$T_C = 100\text{ °C}$	25	20		
Pulsed Drain Current ¹	I_{DM}	50	45		
Continuous Drain Current ³	$T_A = 25\text{ °C}$	12	9.5		
	$T_A = 70\text{ °C}$	10	7.6		
Avalanche Current	I_{AS}	23	17.5		
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	26.4	15.3	mJ
Power Dissipation	$T_C = 25\text{ °C}$	P_D	20	19	W
	$T_C = 100\text{ °C}$		8.3	7.6	
Power Dissipation	$T_A = 25\text{ °C}$	P_D	2.2	1.7	
	$T_A = 70\text{ °C}$		1.4	1.1	
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 ²	$R_{\theta JA}$ Q2		56	°C / W
	$R_{\theta JA}$ Q1		72	
Junction-to-case	$R_{\theta JC}$ Q2		6	
	$R_{\theta JC}$ Q1		6.5	

¹Pulse width limited by maximum junction temperature $T_{J(MAX)}=150\text{ °C}$.

²The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25\text{ °C}$. The value in any given application depends on the user's specific board design.

³Package limitation current is Q2= 19A , Q1= 11A.

PE674DT

Dual 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	Q2	30		V
			Q1	30		
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	Q2	1.3	1.75	2.3
			Q1	1.3	1.75	2.3
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V	Q2			±100
			Q1			±100
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 24V, V _{GS} = 0V	Q2			1
			Q1			1
		V _{DS} = 20V, V _{GS} = 0V, T _J = 55 °C	Q2			10
			Q1			10
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 4.5V, I _D = 10A	Q2		6.7	9.5
		V _{GS} = 4.5V, I _D = 9A	Q1		10.2	15.5
		V _{GS} = 10V, I _D = 10A	Q2		5	7
		V _{GS} = 10V, I _D = 9.5A	Q1		7.5	10.5
Forward Transconductance ¹	g _{fs}	V _{DS} = 5V, I _D = 10A	Q2		66	
		V _{DS} = 5V, I _D = 9.5A	Q1		50	
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 15V, f = 1MHz	Q2		961	
			Q1		627	
Output Capacitance	C _{oss}		Q2		185	
			Q1		129	
Reverse Transfer Capacitance	C _{rss}		Q2		121	
			Q1		97	
Total Gate Charge ²	Q _g	V _{GS} = 10V	Q2		19.3	
			Q1		14	
		V _{GS} = 4.5V	Q2		11.2	
			Q1		7.8	
Gate-Source Charge ²	Q _{gs}	V _{DS} = 15V, V _{GS} = 10V, I _D = 10A	Q2		2.1	
			Q1		1.6	
Gate-Drain Charge ²	Q _{gd}		Q2		5.9	
			Q1		4.1	

PE674DT

Dual N-Channel Enhancement Mode MOSFET

Turn-On Delay Time ²	$t_{d(on)}$	Q2 $V_{DS} = 15V$, $I_D \cong 10A, V_{GS} = 10V, R_{GEN} = 6\Omega$ Q1 $V_{DS} = 15V$, $I_D \cong 9.5A, V_{GS} = 10V, R_{GEN} = 6\Omega$	Q2		13	nS		
Rise Time ²	t_r		Q1		12			
Turn-Off Delay Time ²	$t_{d(off)}$		Q2		57			
			Q1		48			
Fall Time ²	t_f		Q2		35			
			Q1		27			
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25^\circ C$)								
Continuous Current ³	I_S			Q2			16	A
		Q1			17			
Forward Voltage ¹	V_{SD}		Q2		1.2	V		
			Q1		1.1			
Reverse Recovery Time	t_{rr}	Q2 $I_F = 10A, di_F/dt = 100A/\mu S$ Q1 $I_F = 9.5A, di_F/dt = 100A/\mu S$	Q2		12	nS		
Reverse Recovery Charge	Q_{rr}		Q2		3			
		Q1		3	nC			

¹Pulse test : Pulse Width $\leq 300 \mu\text{sec}$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

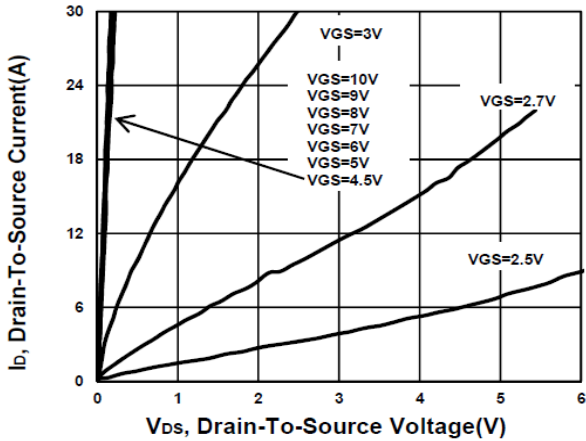
³Package limitation current is Q2=19A , Q1=11A.

PE674DT

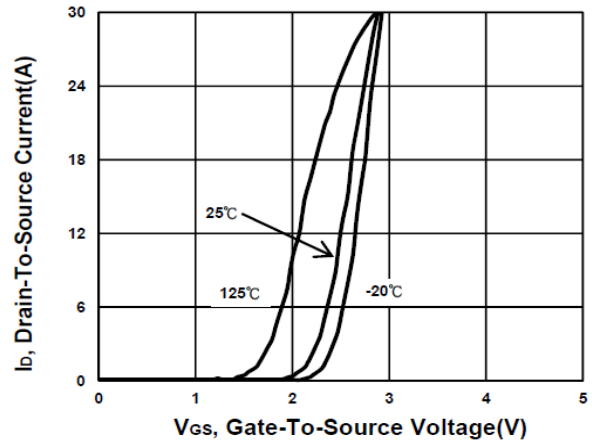
Dual N-Channel Enhancement Mode MOSFET

Q2

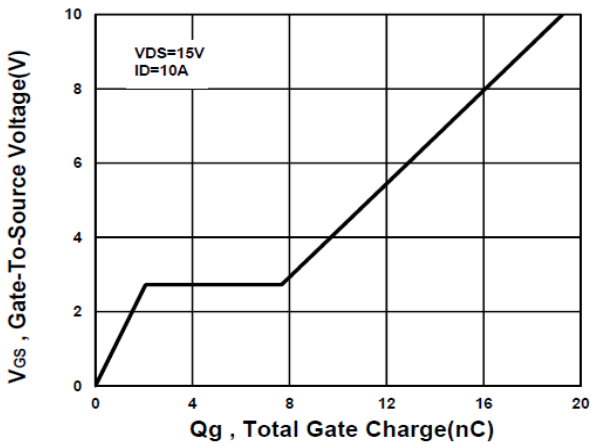
Output Characteristics



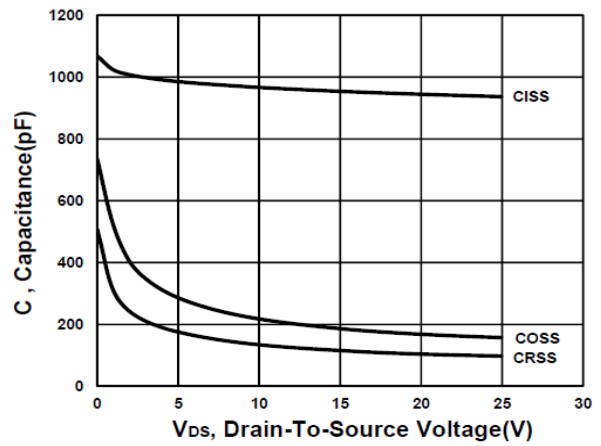
Transfer Characteristics



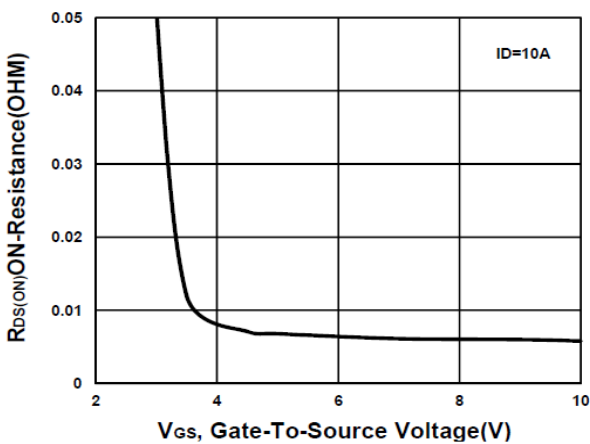
Gate charge Characteristics



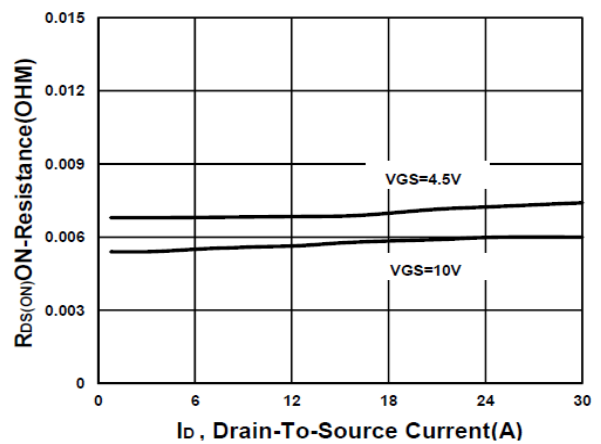
Capacitance Characteristic



On-Resistance VS Gate-To-Source



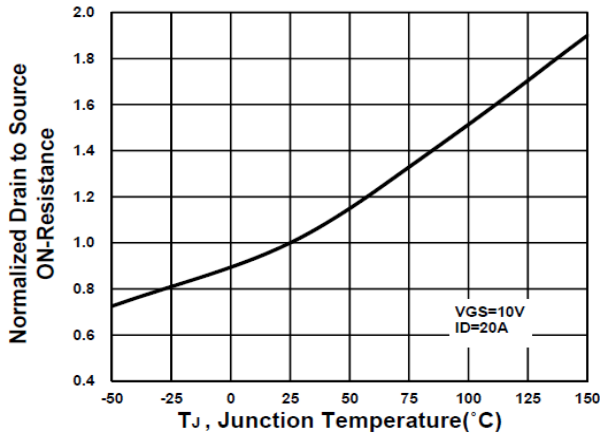
On-Resistance VS Drain Current



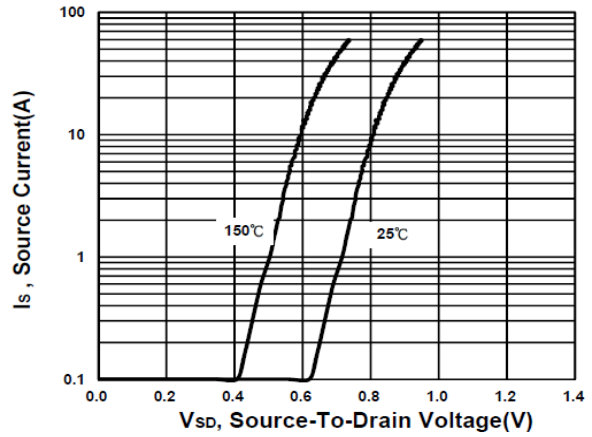
PE674DT

Dual N-Channel Enhancement Mode MOSFET

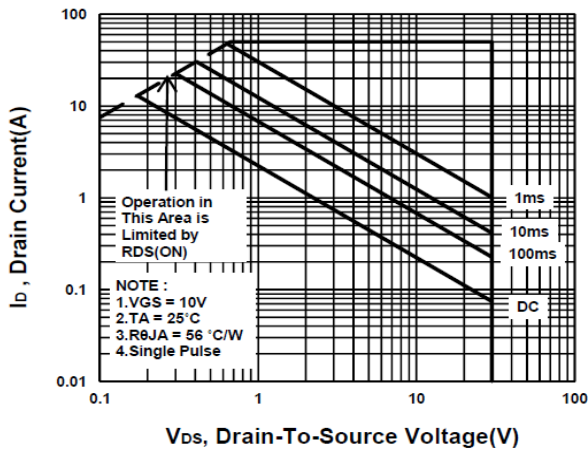
On-Resistance VS Temperature



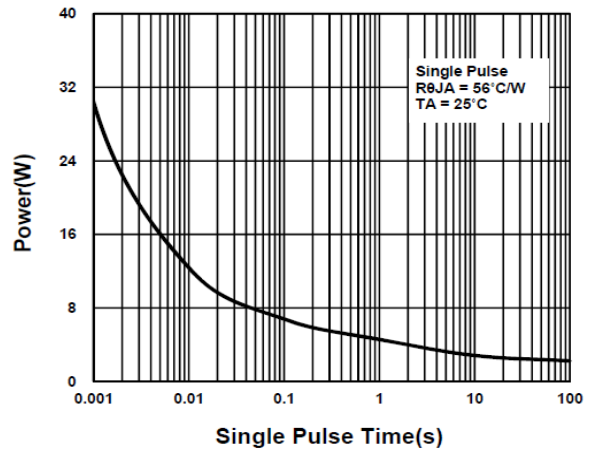
Source-Drain Diode Forward Voltage



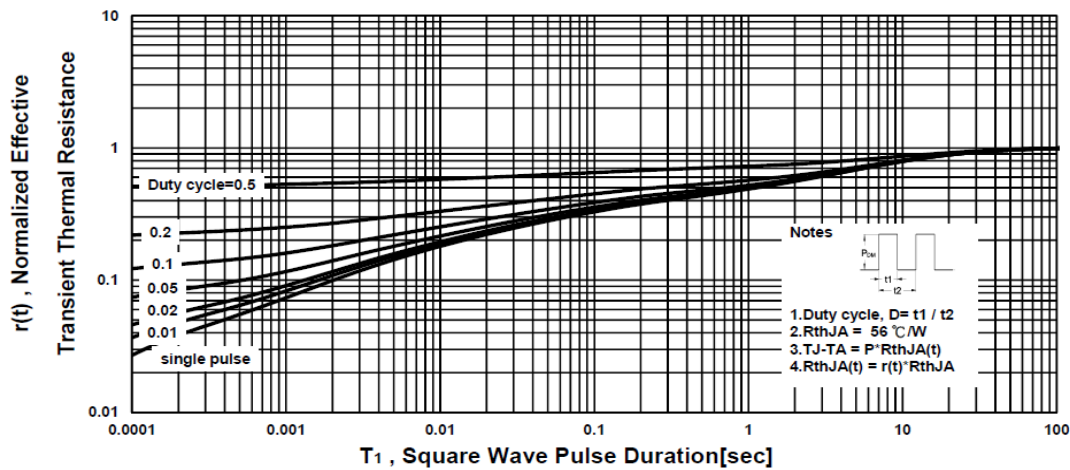
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

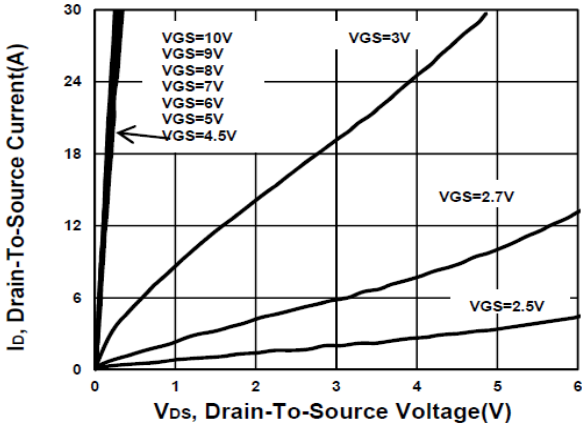


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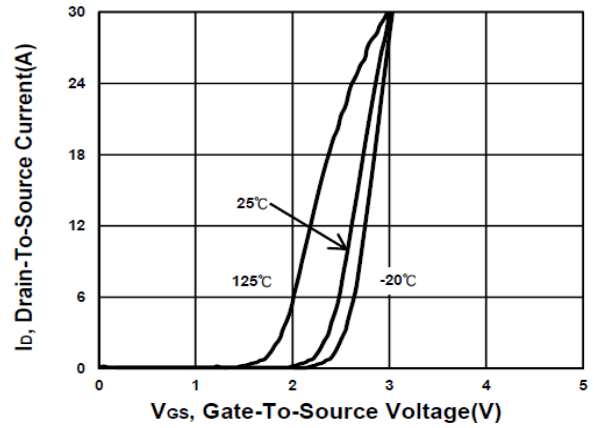
Dual N-Channel Enhancement Mode MOSFET

Q1

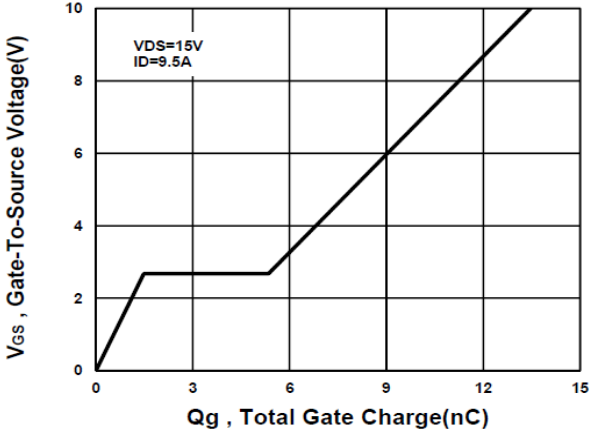
Output Characteristics



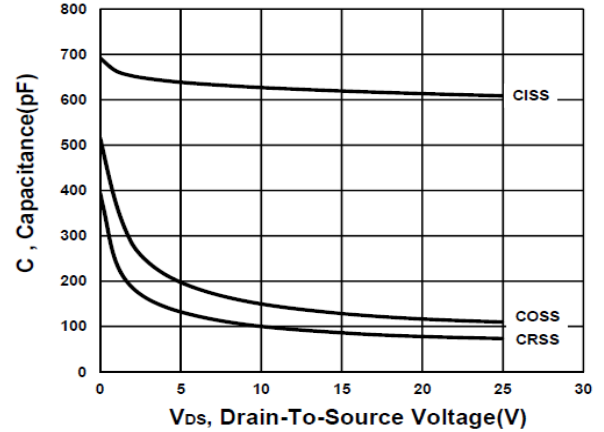
Transfer Characteristics



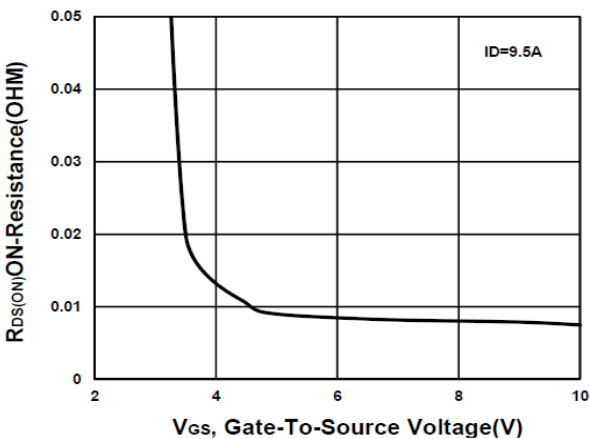
Gate charge Characteristics



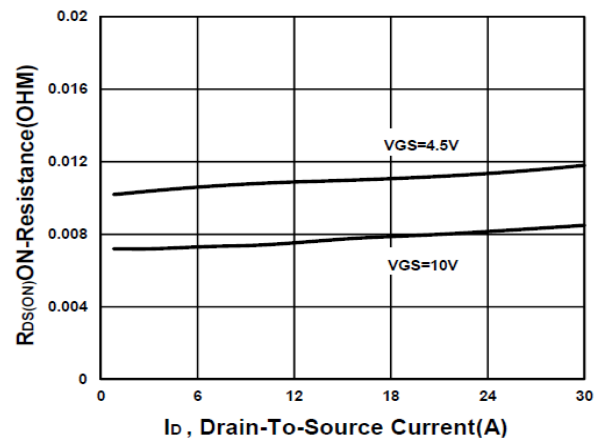
Capacitance Characteristic



On-Resistance VS Gate-To-Source



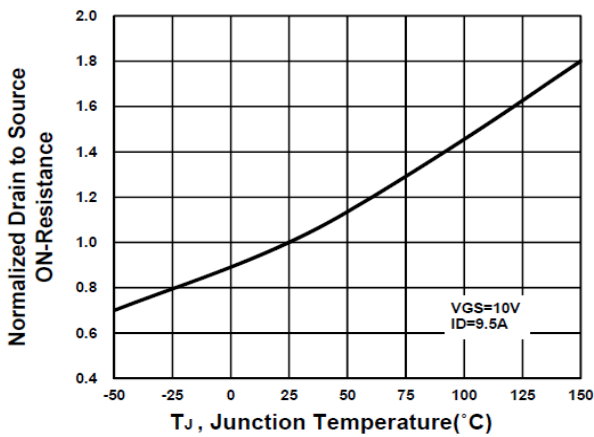
On-Resistance VS Drain Current



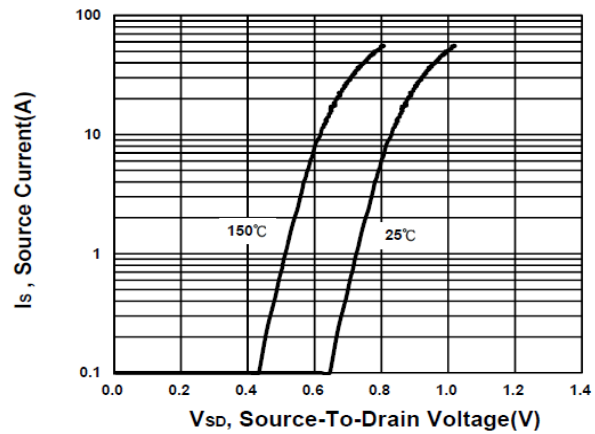
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Dual N-Channel Enhancement Mode MOSFET

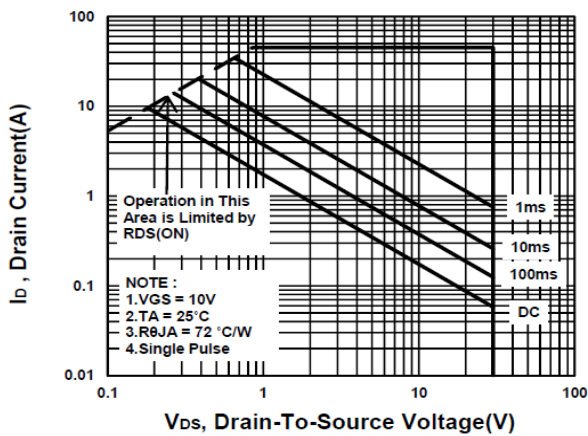
On-Resistance VS Temperature



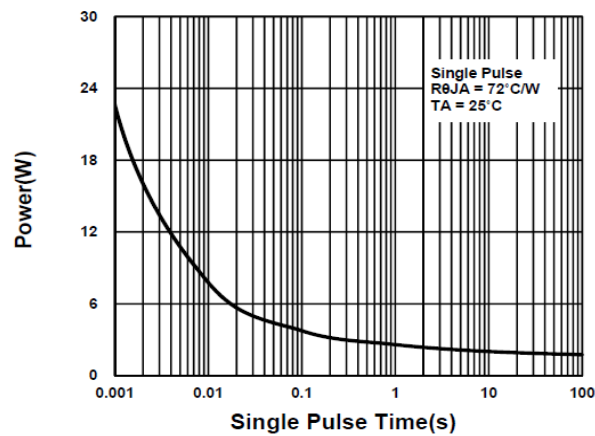
Source-Drain Diode Forward Voltage



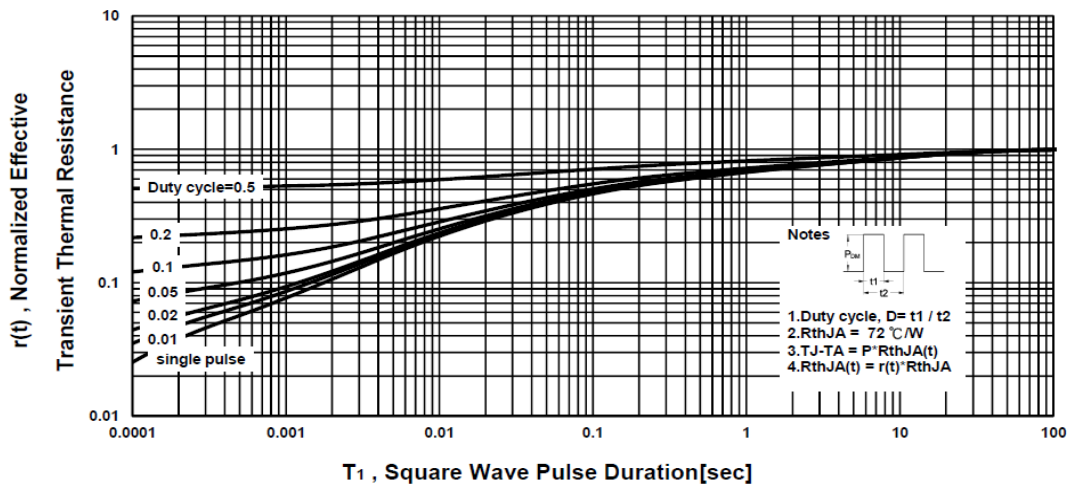
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



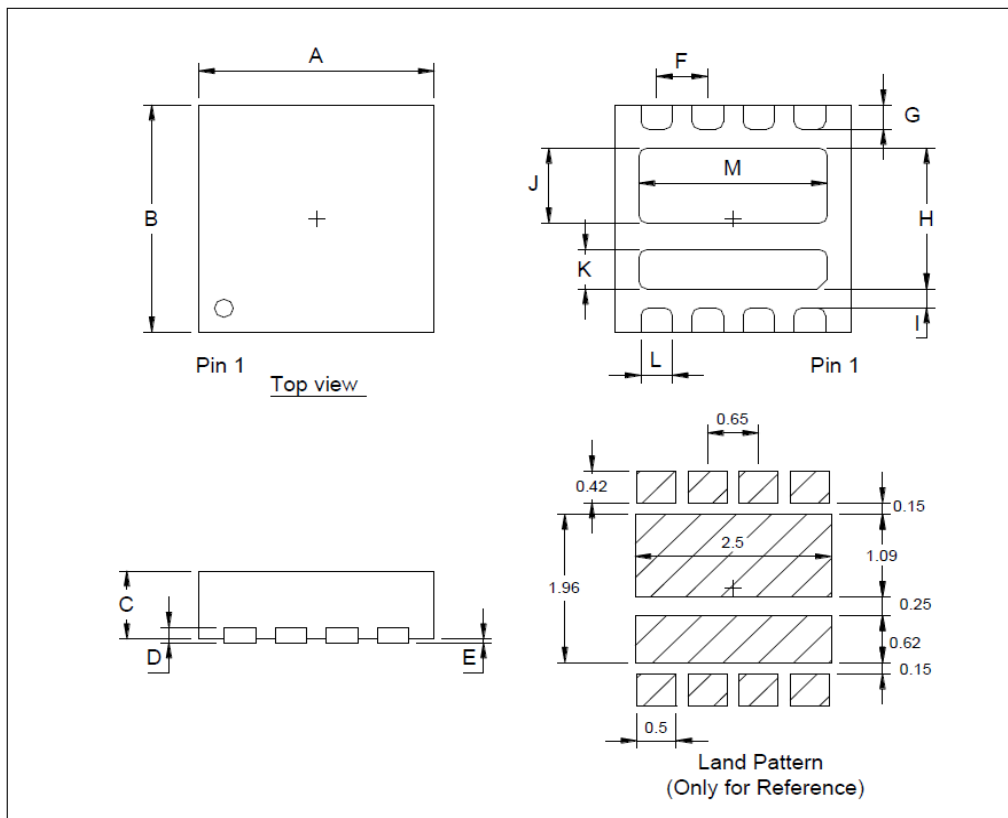
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Dual N-Channel Enhancement Mode MOSFET

Package Dimension

PDFN 3x3S(上下 Dual) MECHANICAL DATA

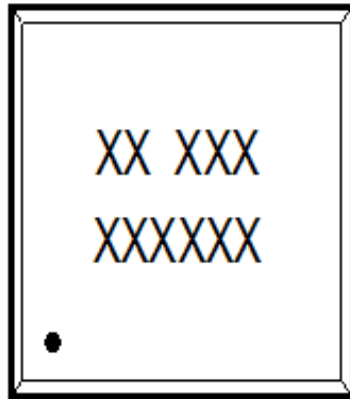
Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	2.9	3	3.1	I		0.25	
B	2.9	3	3.1	J	0.94	0.99	1.04
C	0.8	0.85	0.9	K	0.47	0.52	0.57
D	0.195	0.203	0.211	L	0.35	0.4	0.45
E	0		0.05	M	2.35	2.40	2.45
F		0.65					
G	0.27	0.32	0.37				
H		1.86					



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Dual N-Channel Enhancement Mode MOSFET

A. Marking Information(此产品代码为: M6)

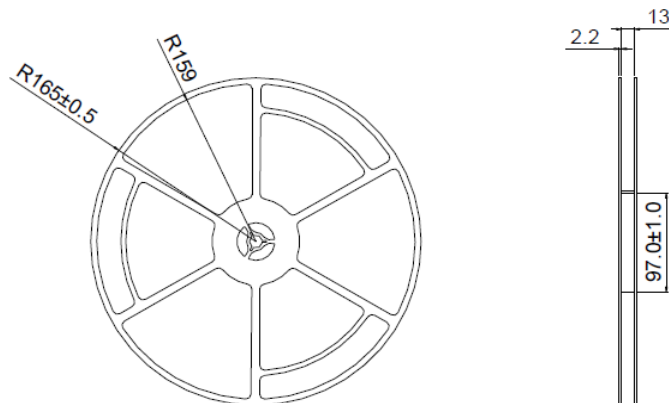
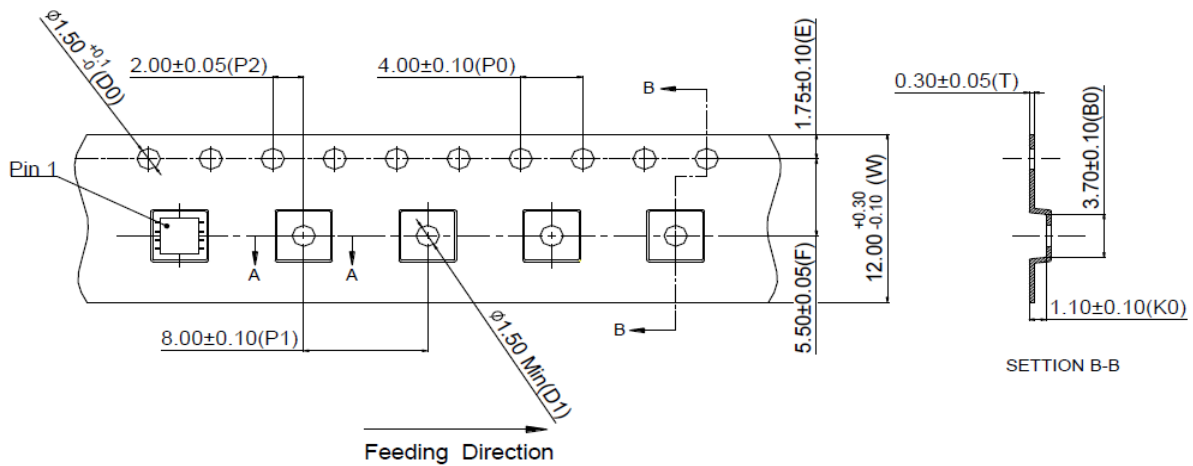


XX(前两码):产品代码

XXX

XXXXXX(后九码):LOT.NO

B. Tape & Reel Information: 5000pcs/Reel

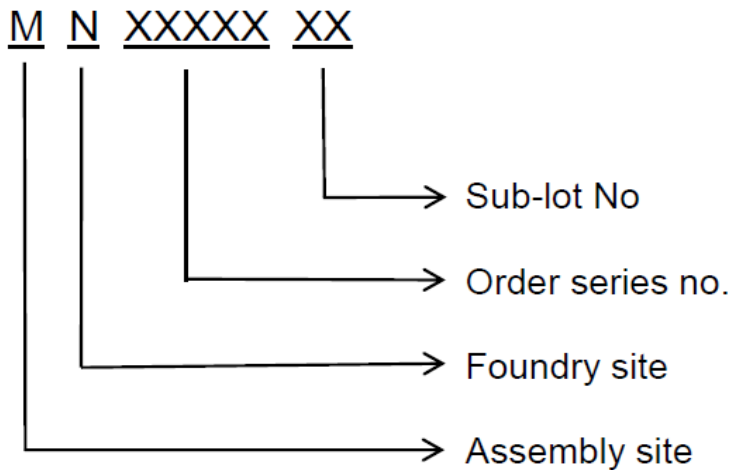


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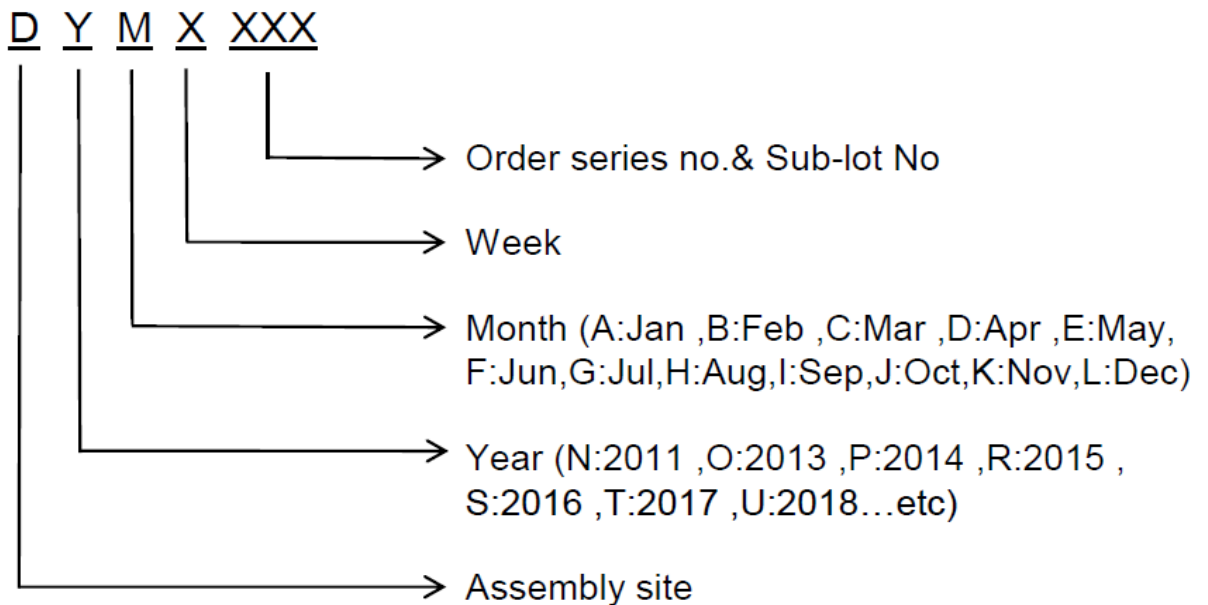
Dual N-Channel Enhancement Mode MOSFET

C. Lot No.&Date Code rule

1.Lot No.



2.Date Code





PE674DT

Dual N-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	U-NIKC	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	RoHS label	 long axis: 12 mm minor axis: 6 mm bottom color: White Font color: Black Font style: Arial
11	Halogen Free label	 Diameter: 10 mm bottom color: Green Font color: Black Font style: Arial
12	Scan information	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