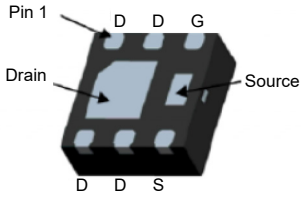
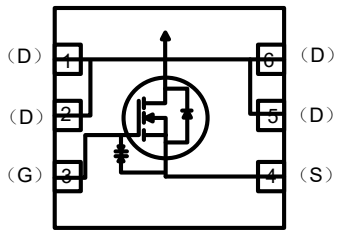
Description

The MOSFET provide the best combination of fast switching, low on-resistance and cost-effectiveness.

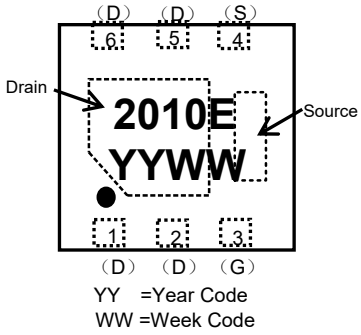
MOSFET Product Summary		
V_{DS}(V)	$R_{DS(on)}$(mΩ)	I_D(A)
20	7.5 @ V_{GS}=4.5V	10



DFN2*2-6L（Bottom View）



Internal structure



YY =Year Code
WW =Week Code

Marking (Top View)

Absolute maximum rating@25℃

Rating		Symbol	Value	Units
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±12	V
Drain Current	Continuous T_A=25℃	I_D	10	A
	Pulsed (Note 1)	I_{DM}	30	A
Total Power Dissipation	T_A=25℃	P_D	1.5	W
ESD (Human Body Model [BM])		V_{ESD}	2	KV
Operating and Storage Junction Temperature Range		T_J,T_{STG}	-55 to 150	℃

Thermal Characteristics

Parameter	Symbol	Max.	Units
Thermal Resistance, Junction to Ambient (Note 2)	$R_{\theta JA}$	145	℃/W

Electrical characteristics per line@25℃(unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Drain-Source Breakdown Voltage	BV_{DSS}	I_D =250μA,V_{GS}=0V	20	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =20V,V_{GS}=0V	-	-	1.0	μA
Gate-to-Source Forward Leakage	I_{GSS}	V_{GS}=±10V	-	-	±10	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.25	0.75	1.25	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=4.5V, I_D =5.5A	-	7.5	9	mΩ
		V_{GS}=2.5V, I_D =5A,	-	9.5	12	
		V_{GS}=1.8V, I_D =5A,	-	15	25	
Maximum Body-Diode Continuous Current	I_s	-	-	-	2.6	A
Forward Trans conductance	g_{FS}	V_{DS}=5V, I_D =10A	-	56	-	S
Diode Forward Voltage	V_{SD}	V_{GS}=0V,I_S=2A	-	0.67		V
		V_{GS}=0V,I_S=10A	-	0.8		
Total Gate Charge	Qg	I_D =10A, V_{DS} =6V, V_{GS} =4.5V	-	16	-	nC
Gate-to-Source Charge	Qgs		-	2.3	-	
Gate-to-Drain(Miller) Charge	Qgd		-	3.9	-	
Input Capacitance	C_{ISS}	V_{GS}=0V, V_{DS} =15V, f=1MHz	-	980	-	pF
Output Capacitance	C_{DSS}		-	195	-	
Reverse Transfer Capacitance	C_{RSS}		-	160	-	
Turn-On Delay Time	$t_{d(on)}$	V_{DS}=6V, I_D =10A, V_{GS}=4.5V , R_{GEN}=6Ω,	-	6.2	-	ns
Rise Time	t_r		-	9	-	
Turn-Off Delay Time	$t_{d(off)}$		-	45	-	
Fall Time	t_f		-	14	-	

Note 1: Repetitive Rating: Pulse width limited by maximum junction temperature.

Note 2: Surface Mounted on FR4 Board, t ≤ 10 sec.

Typical Characteristics

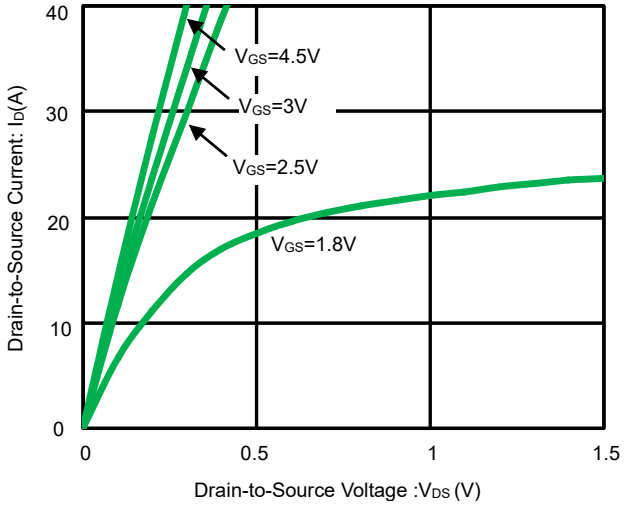


Fig 1. On-Region Characteristics

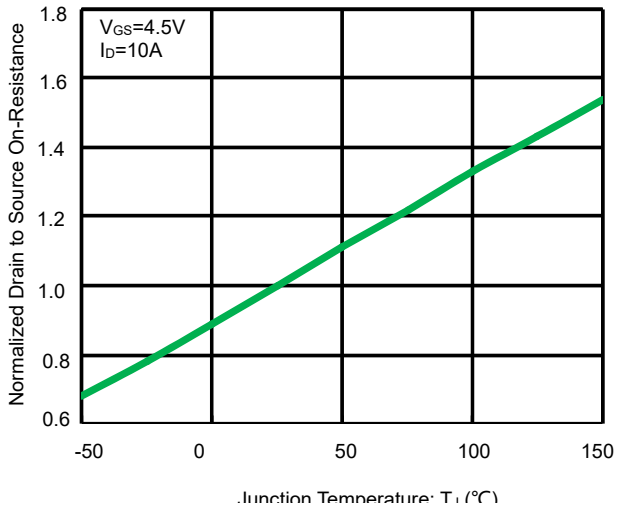


Fig 2. Normalized On-Resistance vs. Junction Temperature

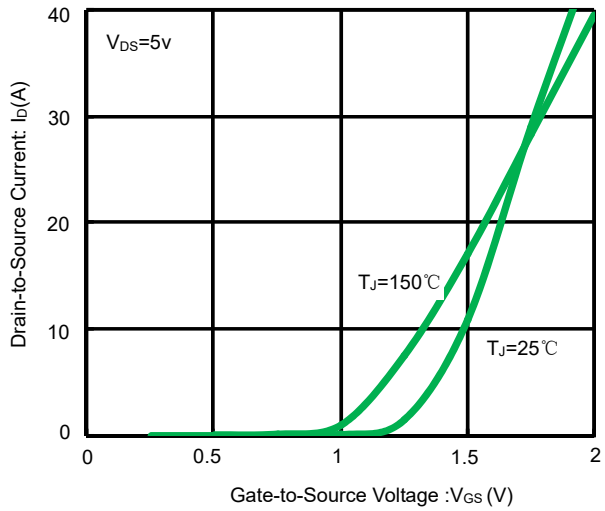


Fig 3. Transfer Characteristics

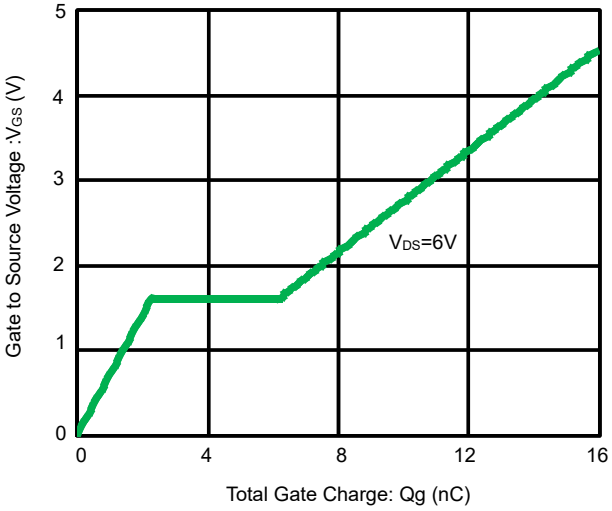


Fig 4. Gate Charge Characteristics

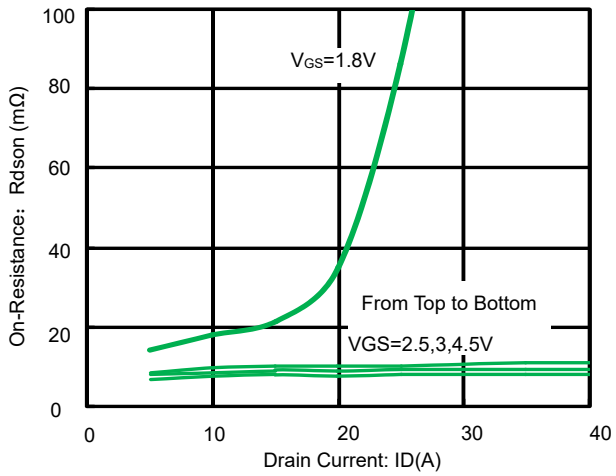


Fig 5. On-Resistance v.s. Drain Current and Gate Voltage

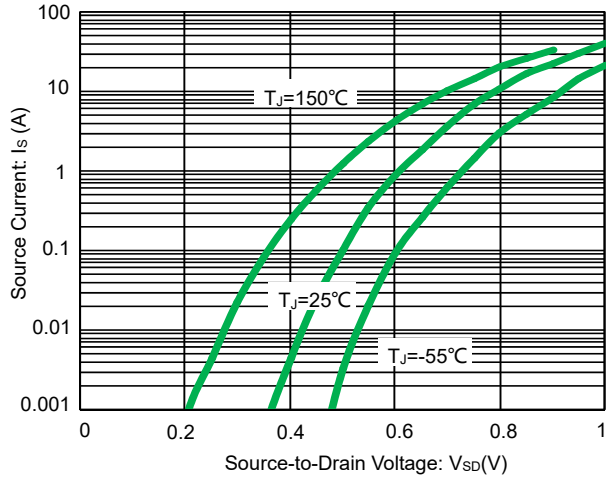


Fig 6. Body diode forward voltage

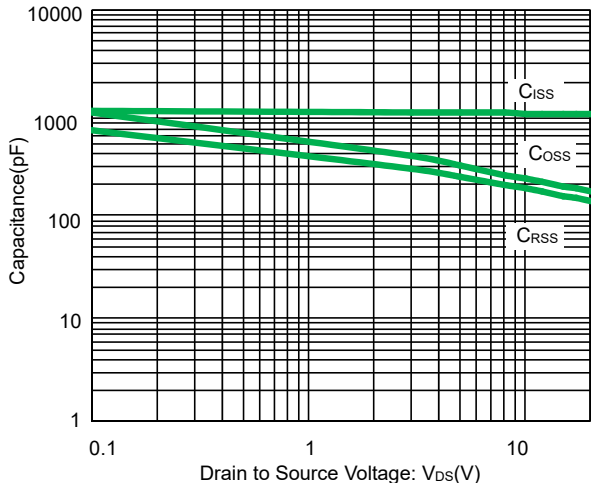


Fig 7. Capacitance Characteristic

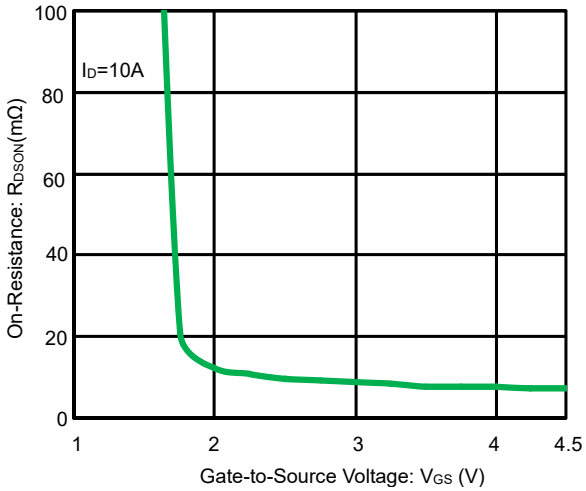


Fig 8. On-Resistance vs. Gate-to-Source Voltage

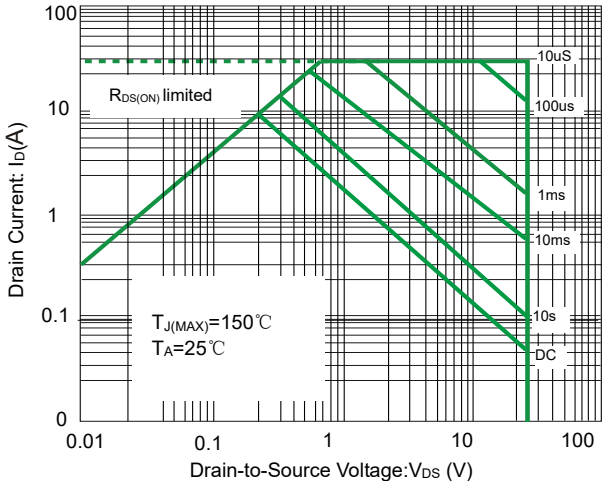


Fig 9. Forward Bias Safe Operating Area

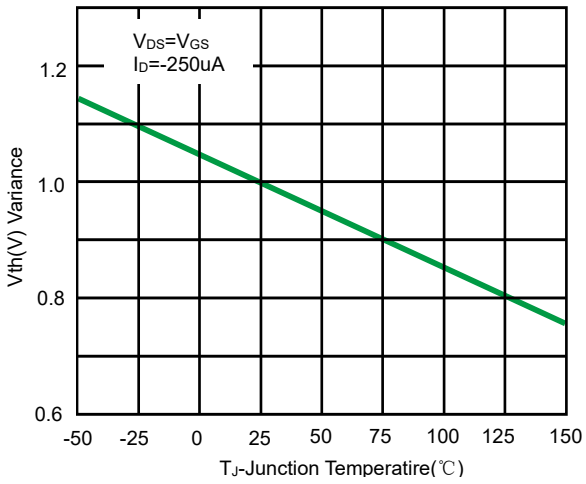


Fig 10. $V_{GS(th)}$ vs Junction Temperature

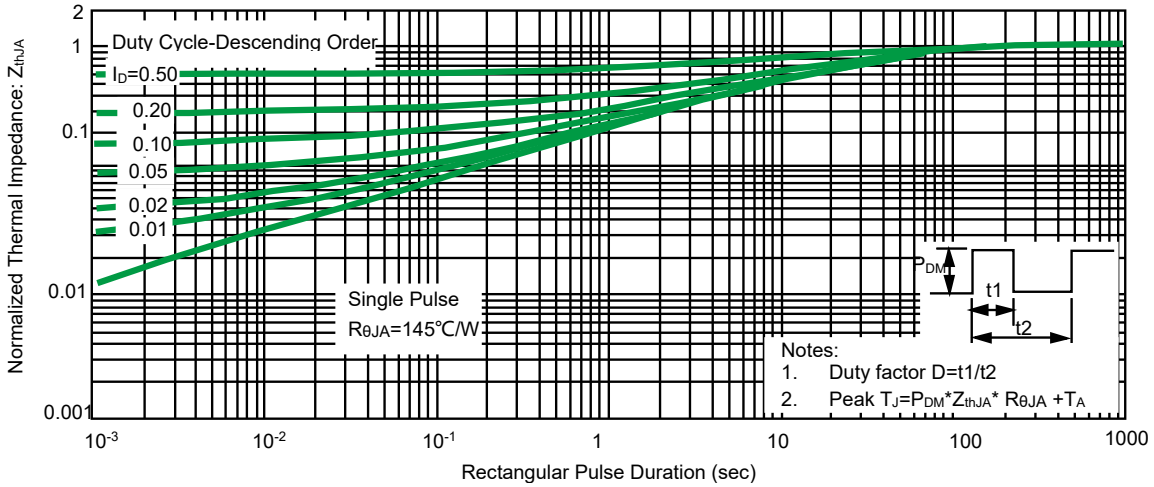
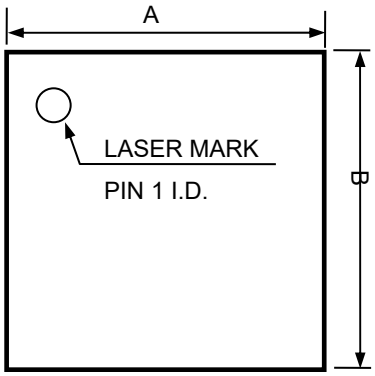
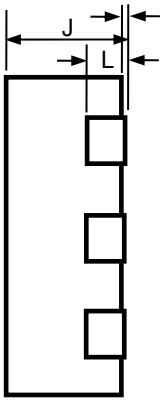


Fig 11. Transient Thermal Response Curve, Junction-to-Ambient

Product dimension （DFN2*2-6L）

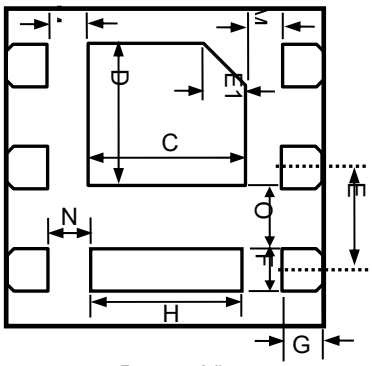


Top View

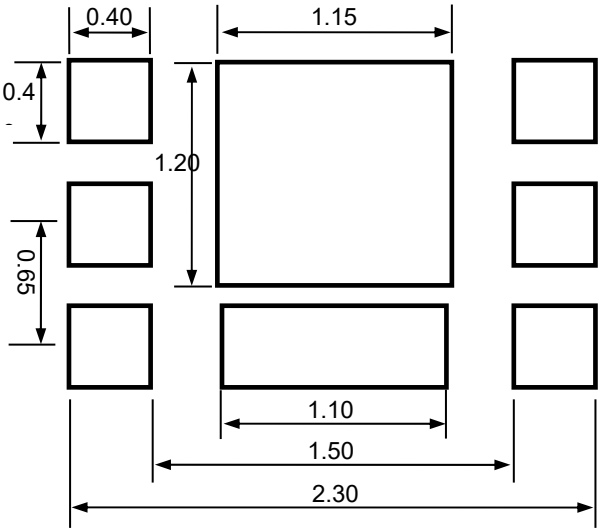


Side View

Dim	Millimeters	
	MIN	MAX
A	1.90	2.10
B	1.90	2.10
C	0.70	1.10
D	0.80	1.00
E	0.55	0.75
E1	0.25 Ref.	
F	0.25	0.35
G	0.20	0.35
H	0.50	1.00
J	0.60	0.80
K	0.00	0.05
L	0.20 Ref.	
M	0.15	--
N	0.20	--
O	0.25	--



Bottom View



Suggested PCB Layout

Ordering information

Device	Package	Reel	Shipping
PNM6N20V10E	DFN2*2-6L (Pb-Free)	7"	3000 / Tape & Reel

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