

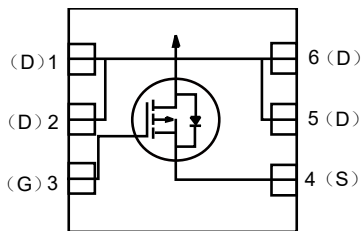
Description

The enhancement mode MOS is extremely high density cell and low on-resistance.

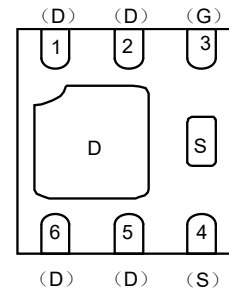
MOSFET Product Summary

$V_{DS}(V)$	$R_{DS(on)}(m\Omega)$	$I_D(A)$
-20	15@ $V_{GS}=-4.5V$	-10

Internal structure



Bottom View



Absolute maximum rating@25°C

Rating		Symbol	Value	Units
Drain-Source Voltage		V_{DS}	-20	V
Gate-Source Voltage		V_{GS}	± 12	V
Drain Current	Continuous $T_A=25^\circ C$	I_D	-10	A
	Pulsed $T_A=70^\circ C$	I_D	-40	A
Total Power Dissipation	$T_A=25^\circ C$	P_D	2.4	W
	$T_A=125^\circ C$	P_D	0.9	W
Operating and Storage Junction Temperature Range		T_J, T_{STG}	-55 to +150	$^\circ C$

Thermal Characteristics

Parameter	Symbol	Max.	Units
Thermal Resistance, Junction to Ambient (Note 1a)	$R_{\theta JA}$	52	$^\circ C/W$
Thermal Resistance, Junction to Ambient (Note 1b)	$R_{\theta JA}$	145	
Thermal Resistance, Junction to Case	$R_{\theta JC}$	6.9	

Electrical characteristics per line@25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D = -250\mu A, V_{GS} = 0V$	-20	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -16V, V_{GS} = 0V$	-	-	-1.0	μA
Gate-to-Source Forward Leakage	I_{GSS}	$V_{GS} = \pm 10V$	-	-	± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.5	-0.9	-1.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -10A$	-	15	19	m Ω
		$V_{GS} = -2.5V, I_D = -8A,$	-	22	30	m Ω
Forward Trans conductance	g_{FS}	$V_{DS} = -5V, I_D = -10A$	-	23	-	S
Total Gate Charge	Q_g	$I_D = -10A, V_{DD} = -6V,$ $V_{GS} = -4.5V$	-	17.5	-	nC
Gate-to-Source Charge	Q_{gs}		-	4.0	-	
Gate-to-Drain(Miller) Charge	Q_{gd}		-	4.0	-	
Input Capacitance	C_{ISS}	$V_{GS} = 0V, V_{DS} = -15V,$ $f = 1MHz$	-	1900	-	pF
Output Capacitance	C_{DSS}		-	224	-	pF
Reverse Transfer Capacitance	C_{RSS}		-	210	-	pF
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -6.0V, I_D = -10A,$ $V_{GS} = -4.5V, R_{GEN} = 6\Omega,$	-	25	-	ns
Rise Time	t_r		-	36	-	
Turn-Off Delay Time	$t_{d(off)}$		-	126	-	
Fall Time	t_f		-	92	-	
Source to Drain Diode Forward Voltage	V_{SD}	$V_{GS} = 0V, I_S = -2A$	-	-0.75	-	V
		$V_{GS} = 0V, I_S = -10A$	-	-0.95	-	

Typical Characteristics

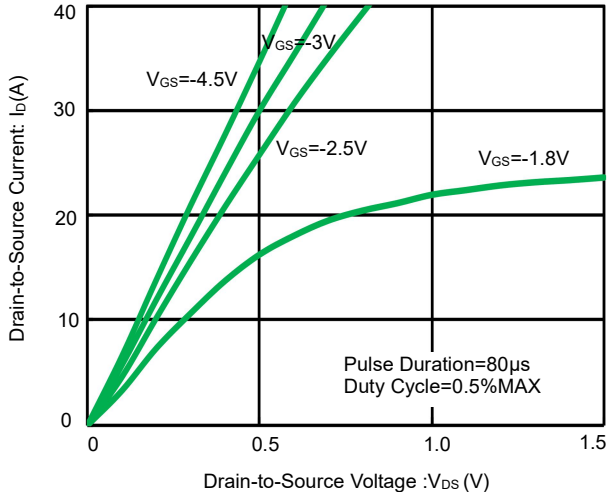


Fig 1. On-Region Characteristics

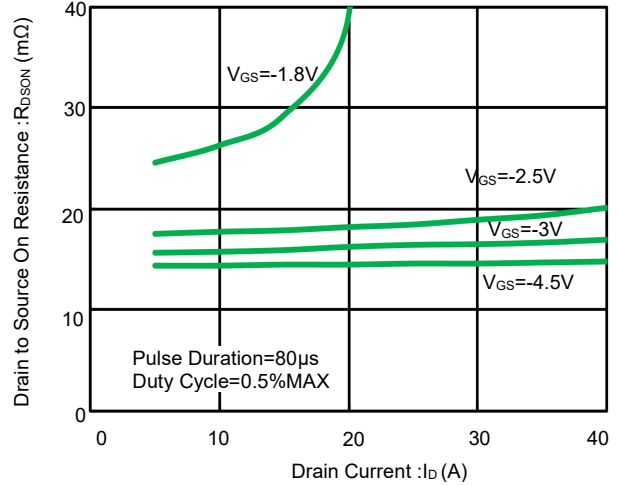


Fig 2. On-Resistance vs. Drain Current

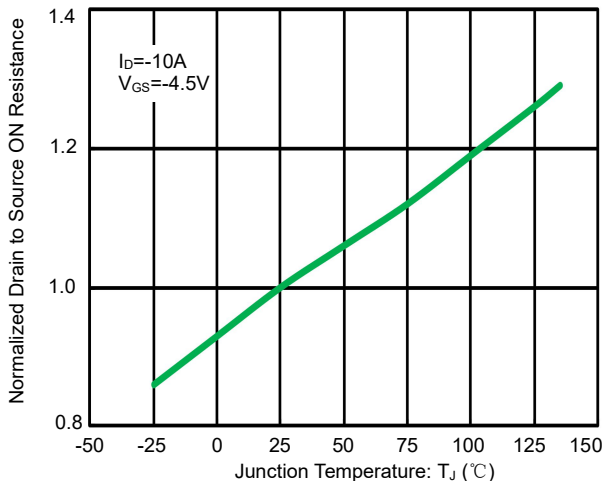


Fig 3. Normalized On-Resistance vs. Junction Temperature

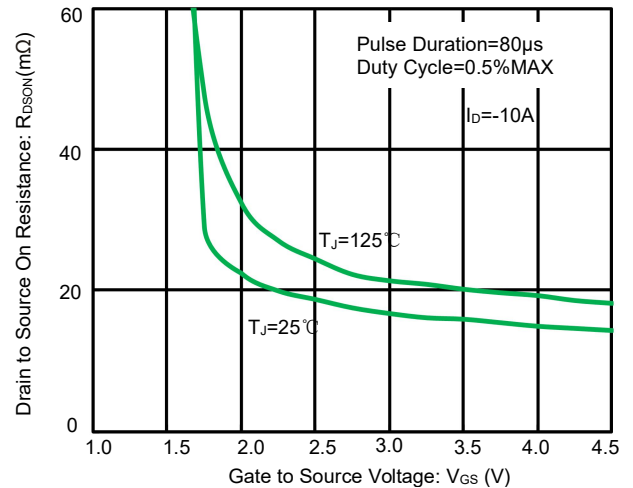


Fig 4. On-Resistance vs. Gate-to-Source Voltage

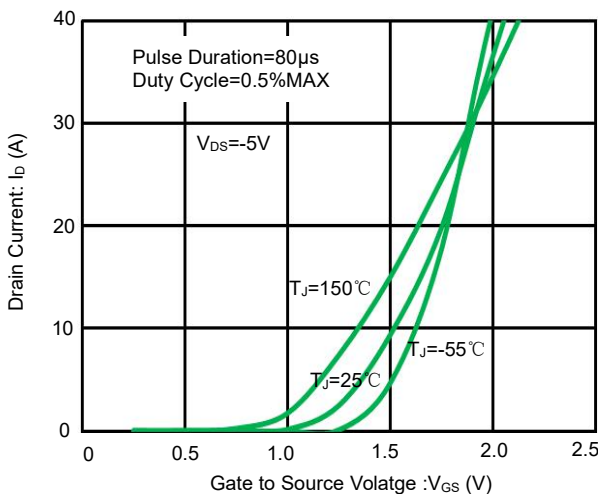


Fig 5. Transfer Characteristics

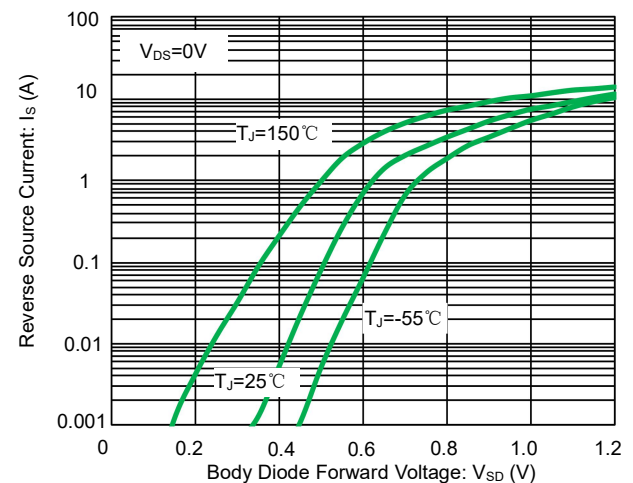


Fig 6. Reverse Source Current vs. Source to Drain Diode Forward Voltage

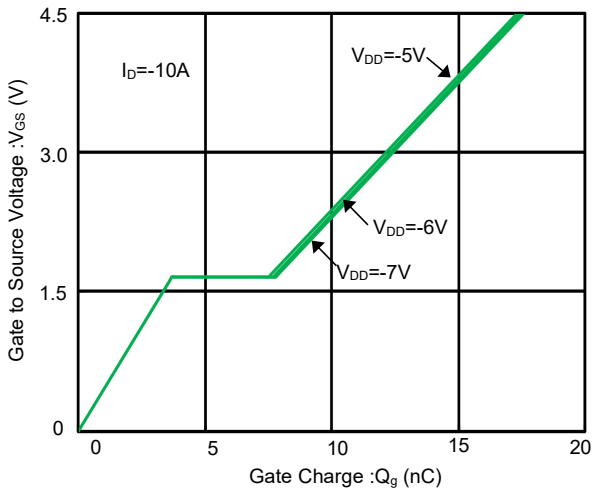


Fig 7. Gate Charge Characteristics

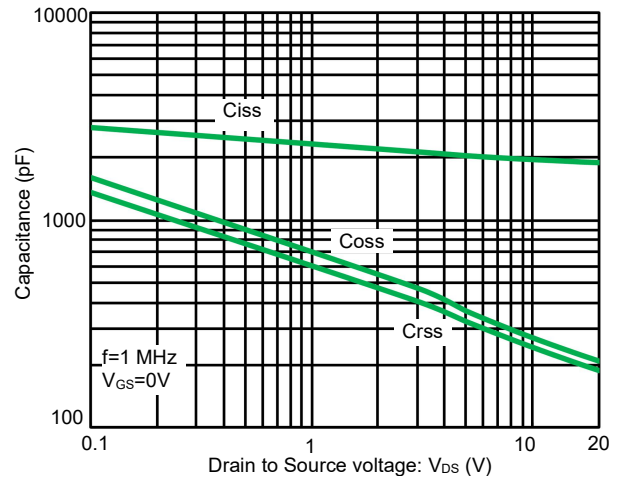


Fig 8. Capacitance vs. Drain-to-Source Voltage

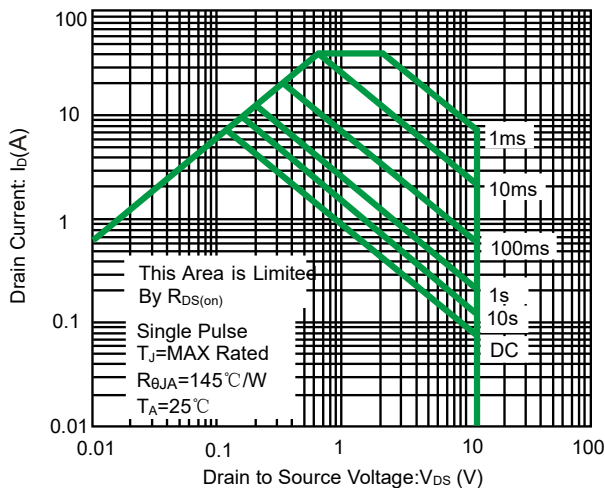


Fig 9. Forward Bias Safe Operating Area

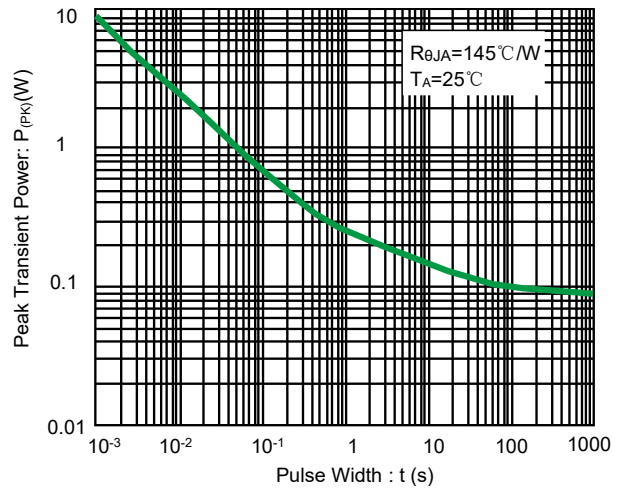


Fig 10. Single Pulse Maximum Power Dissipation

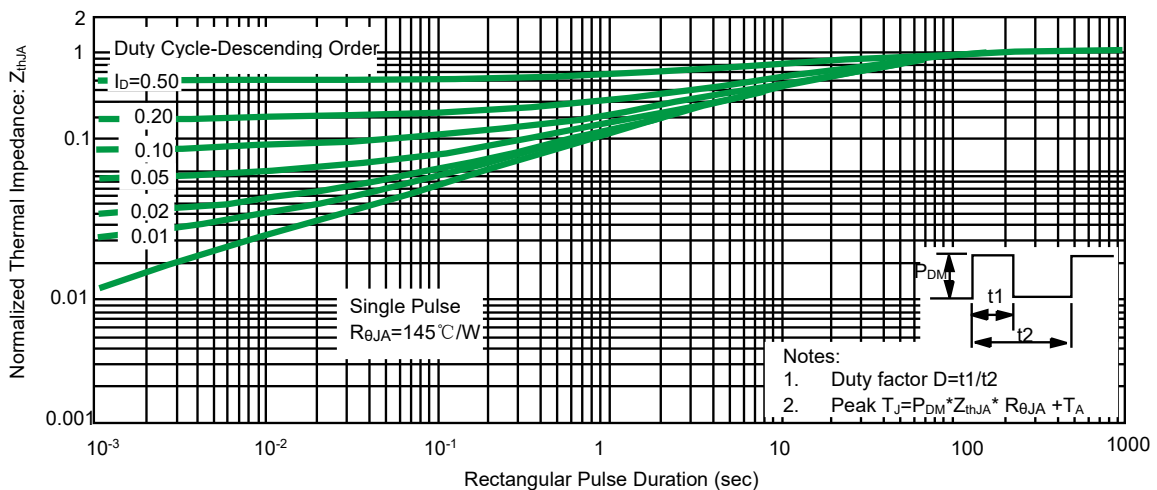
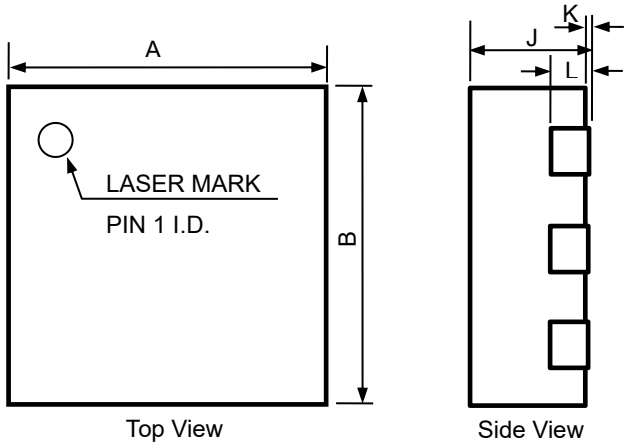


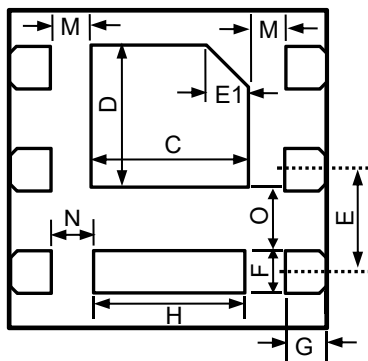
Fig 11. Transient Thermal Response Curve, Junction-to-Ambient

Product dimension (DFN2*2-6L)



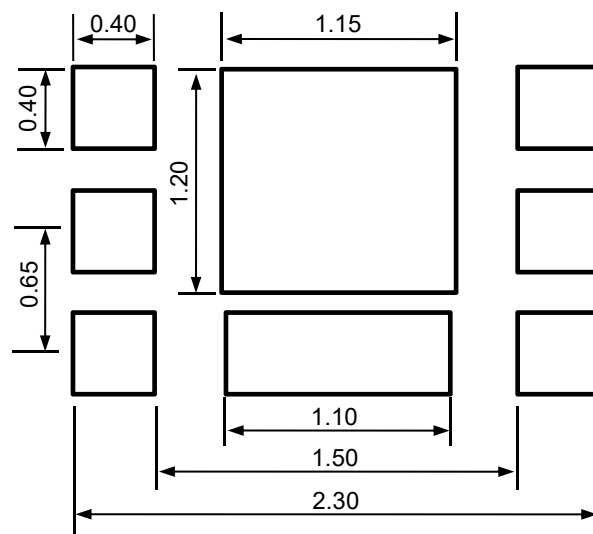
Top View

Side View



Bottom 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	--



Suggested PCB Layout

Marking information




YY =Year code
WW =Week code

Ordering information

Device	Package	Reel	Shipping
PPM6N20V10	DFN2*2-6L	7"	3000 / Tape & Reel


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