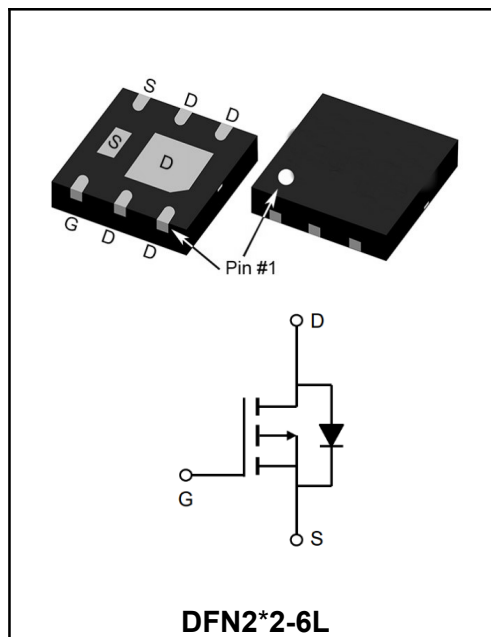


-20V P-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	-20A
V_{DSS}	-20V
$R_{DS(on)-typ}(@V_{GS}=-4.5V)$	$< 15m\Omega$ (Typ: 11 m Ω)
$R_{DS(on)-typ}(@V_{GS}=-2.5V)$	$< 20m\Omega$ (Typ: 15 m Ω)



Application

- ◆ Load Switch
- ◆ PWM Application
- ◆ Power Management

Maximum Ratings at $T_c=25^{\circ}C$ unless otherwise specified

Characteristics	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	-20	V
Gate - Source Voltage	V_{GS}	± 12	V
Continuous Drain Current @ $T_A=25^{\circ}C$	I_D	-20	A
Continuous Drain Current @ $T_A=100^{\circ}C$	I_D	-10.8	A
Pulsed Drain Current ¹	I_{DM}	-72	A
Total Power Dissipation @ $T_A=25^{\circ}C$	P_D	7.8	W
Storage Temperature Range	T_{STG}	-55 to +150	$^{\circ}C$
Operating Junction Temperature Range	T_J	-55 to +150	$^{\circ}C$
Thermal Resistance Junction-Ambient	$R_{\theta JA}$	60	$^{\circ}C/W$
Thermal Resistance Junction-Case	$R_{\theta JC}$	16	$^{\circ}C/W$

Electrical Characteristics (T_J=25 °C, unless otherwise noted)

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250uA	BV_{DSS}	-20	-	-	V
Zero Gate Voltage Drain Current	V _{DS} = -20V , V _{GS} =0V	I_{DSS}	-	-	-1.0	μA
Gate –Source Leakage Current	V _{GS} =±12V, V _{DS} =0V	I_{GSS}	-	-	±100	nA
Gate Threshold Voltage	V _{DS} =V _{GS} , I _D = -250μA	V_{GS(th)}	-0.4	-0.65	-1.0	V
Static Drain-Source On-Resistance ²	V _{GS} = -4.5V, I _D =-5A	R_{DS(ON)}	-	11	15	mΩ
	V _{GS} = -2.5V, I _D =-3A		-	15	20	
Input Capacitance	V _{DS} =-10V V _{GS} =0V f=1.0MHz	C_{iss}	-	1946	-	pF
Output Capacitance		C_{oss}	-	297	-	
Reverse Transfer Capacitance		C_{rss}	-	257	-	
Total Gate Charge	V _{GS} = 0 to -4.5V V _{DS} = -10V I _D = -6A	Q_g	-	15.8	-	nC
Gate-Source Charge		Q_{gs}	-	3.2	-	
Gate-Drain(“Miller”) Charge		Q_{gd}	-	4	-	
Turn-on delay time	V _{GS} = -4.5V V _{DD} = -10V, I _D = -12A R _{GEN} =3Ω	t_{d(on)}	-	14.5	-	ns
Rise Time		T_r	-	83	-	
Turn-Off Delay Time		t_{d(OFF)}	-	80	-	
Fall Time		t_f	-	75	-	
Maximum Continuous Drain to Source Diode Forward Current		I_S	-	-	-20	A
Maximum Pulsed Drain to Source Diode Forward Current		I_{SM}	-	-	-72	A
Drain to Source Diode Forward Voltage	V _{GS} =0V, I _S = -5A	V_{SD}	-	-	-1.2	V
Body Diode Reverse Recovery Time	I _F = -5A, di/dt =100A/us	trr	-	170	-	ns
Body Diode Reverse Recovery Charge		Qrr	-	280	-	nC

Notes:

1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.

2. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%.

Typical Characteristics

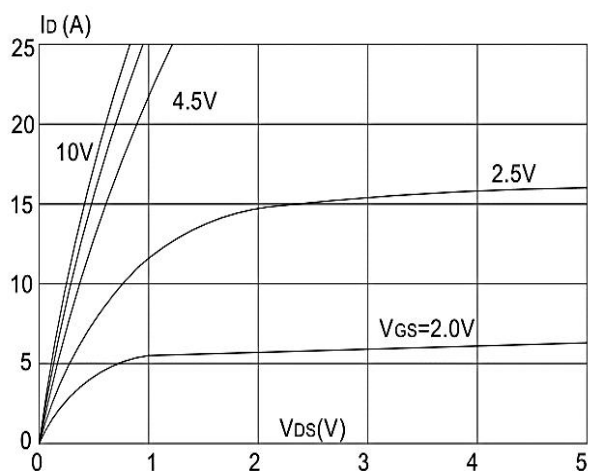


Figure1: Output Characteristics

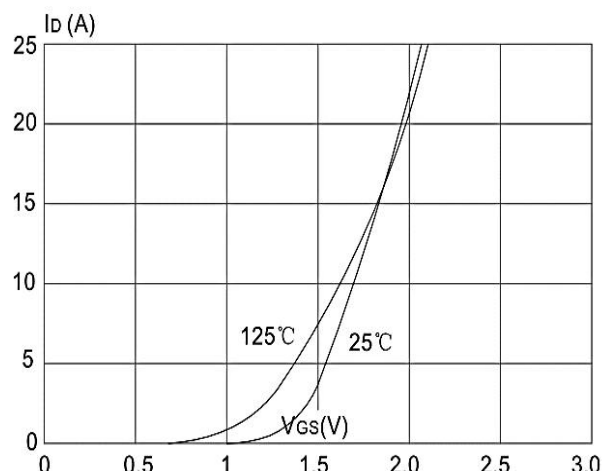


Figure 2: Typical Transfer Characteristics

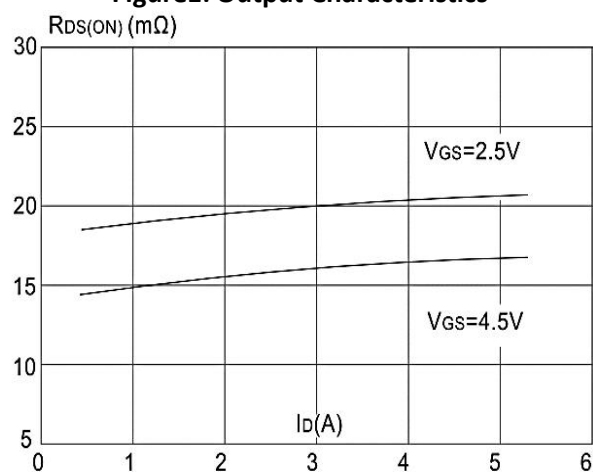


Figure 3: On-resistance vs. Drain Current

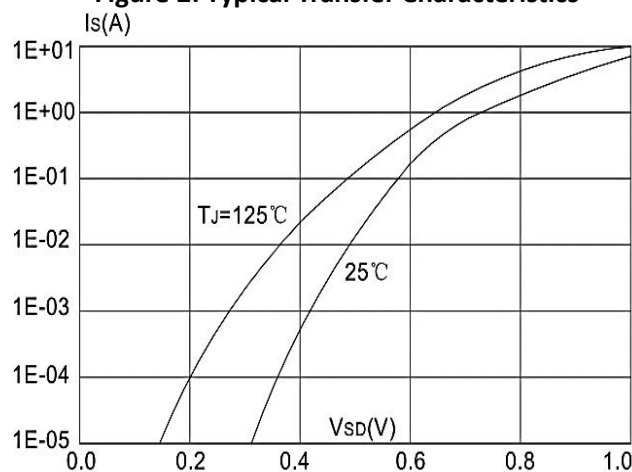


Figure 4: Body Diode Characteristics

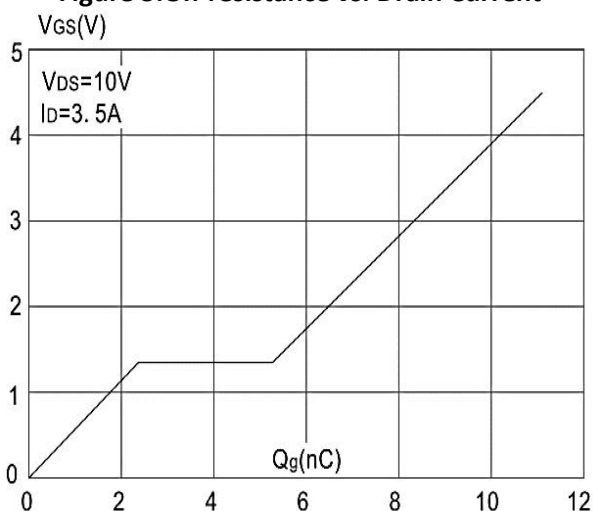


Figure 5: Gate Charge Characteristics

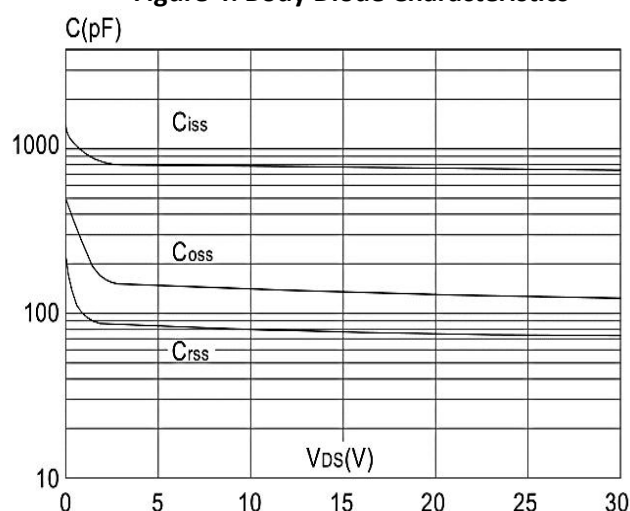


Figure 6: Capacitance Characteristics

Typical Characteristics

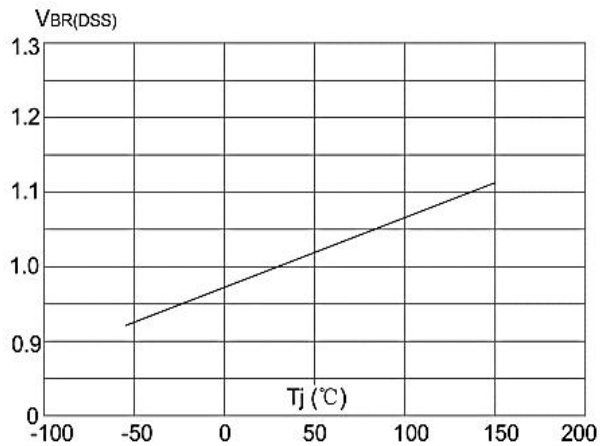


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

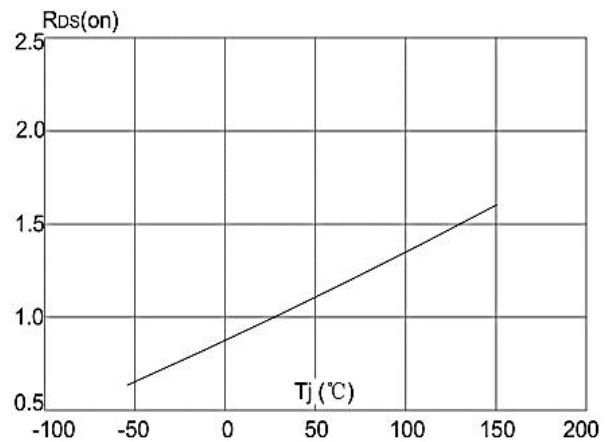


Figure 8: Normalized on Resistance vs. Junction Temperature

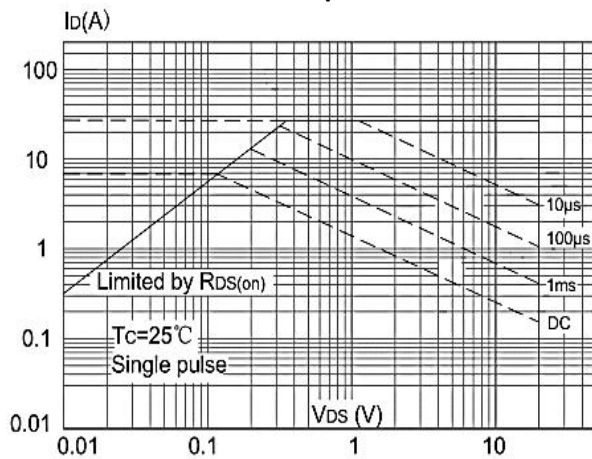


Figure 9: Maximum Safe Operating Area vs. Case Temperature

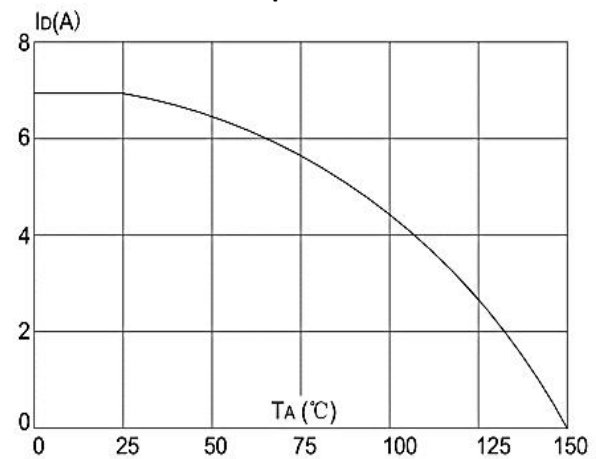


Figure 10: Maximum Continuous Drain Current

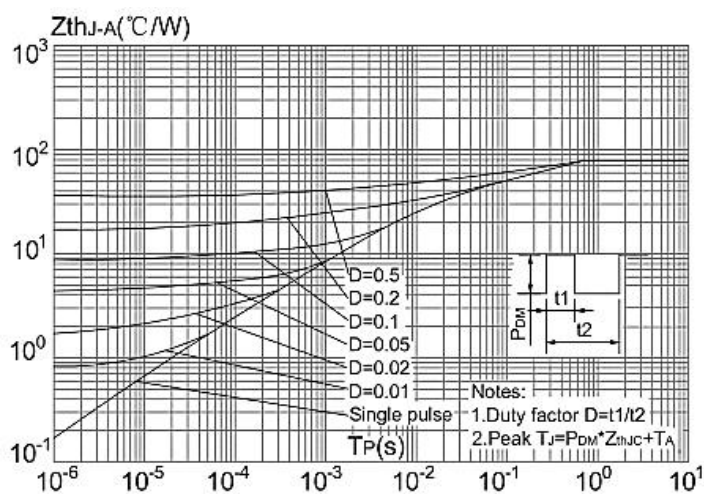


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Case

Ordering information

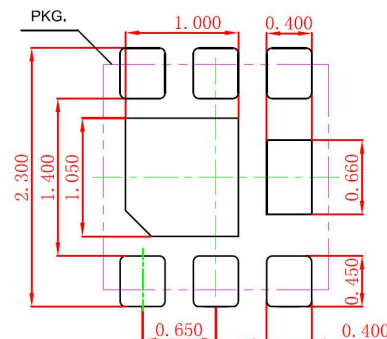
Package	Packing Description	Packing Quantity
DFN2*2-6L	Tape/Reel, 13" reel	3000PCS/Reel 30000PCS/Carton

Package Dimensions

DFN2*2-6L

Dim.	Millimeter(mm)		mil	
	Min.	Max.	Min.	Max.
A	0.45	0.65	18	26
A1	0.00	0.05	-	2
b	0.25	0.35	10	14
c	0.155			
D	1.90	2.05	75	81
e	0.65			
E	1.90	2.05	75	81
E1	1.05	1.25	41	49
D1	0.85	1.05	34	41
L	0.25	0.35	10	14

The recommended mounting pad size Millimeter(mm)



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