Descriptions

This ±30V N-Channel and P-Channel compleme-ntary Enhancement MOSFET in a PDFN3×3-8L Plastic Package.

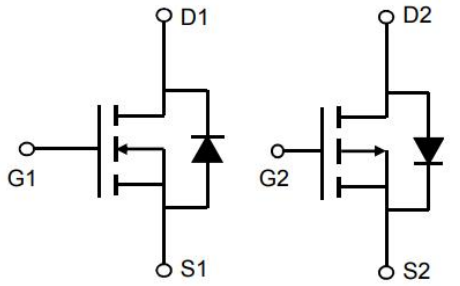
Features

N-channel	P-channel
V_{DS}(V)=30V	VDS(V)=-30V
I_D=20A	ID=12A
$R_{DS(ON)}$<20mΩ(V_{GS}=10V)	RDS(ON)<52mΩ(VGS=10V)
$R_{DS(ON)}$<28mΩ(V_{GS}=4.5V)	RDS(ON)<73mΩ(VGS=4.5V)
Halogen-free Product.	Halogen-free Product.

Applications

These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies. And suitable for use as a load switch or in PWM applications.

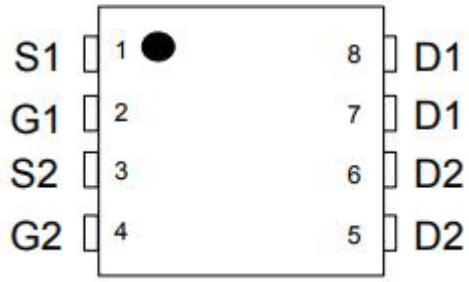
Equivalent Circuit

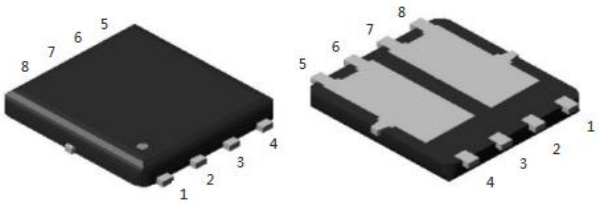


N-Channel P-Channel

Pinning

Top View





Absolute Maximum Ratings(Ta=25℃)

Parameter	Symbol	Rating		Unit
		N-channe	P-channell	
Drain-Source Voltage	V_{DSS}	±30		V
Gate-Source Voltage	V_{GSS}	±20		V
Continuous Drain Current	I_D (T_A=25℃)	20	12	A
Power Dissipation	P_D (T_A=25℃)	11.2	10	W
Junction and Storage Temperature Range	T_J,T_{STG}	-55 to +150		℃
Maximum Junction-to-Case	$R_{\theta JC}$(Steady-State)	11.2	12.5	℃/W
Maximum Junction-to-Ambient	$R_{\theta JA}$(Steady-State)	45		℃/W

Electrical Characteristics(Ta=25℃)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250μA	30	35		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V V_{GS}=0V			1.0	μA
		V_{DS}=30V V_{GS}=0V T_J=55℃			5.0	μA
Gate-Body leakage current	I_{GSS}	V_{GS}=±20V V_{DS}=0V			100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250μA	1.0	1.6	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V I_D=6.9A		20	25	mΩ
		V_{GS}=4.5V I_D=5.0A		28	40	mΩ
Diode Forward Voltage	V_{SD}	V_{GS}=0V I_S=1.0A		0.78	1.2	V
Input Capacitance	C_{iss}	V_{DS}=25V V_{GS}=0V f=1.0MHz		690		pF
Output Capacitance	C_{oss}			200		pF
Reverse Transfer Capacitance	C_{rss}			130		pF
Gate resistance	R_g	V_{DS}=0V V_{GS}=0V f=1.0MHz		2.7		Ω
Total Gate Charge(10V)	Q_g	V_{GS}=10V V_{DS}=15V I_D=6A		5.2		nC
Total Gate Charge(4.5V)				2.5		nC
Gate-Source Charge	Q_{gs}			0.8		nC
Gate-Drain Charge	Q_{gd}			1.3		nC
Turn-On Delay Time	$t_{d(on)}$	V_{DS}=15 V V_{GS}=10V R_L=2.5Ω R_{GEN}=3Ω		4.5		ns
Turn-On Rise Time	t_r			2.5		ns
Turn-Off Delay Time	$t_{d(off)}$			14.5		ns
Turn-Off Fall Time	t_f			3.5		ns

Electrical Characteristic Curve

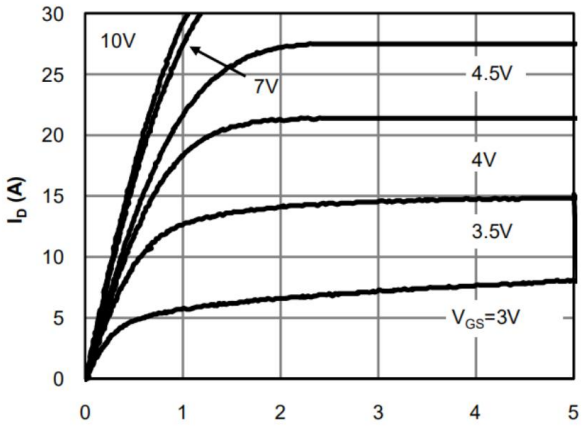


Fig 1: On-Region Characteristics

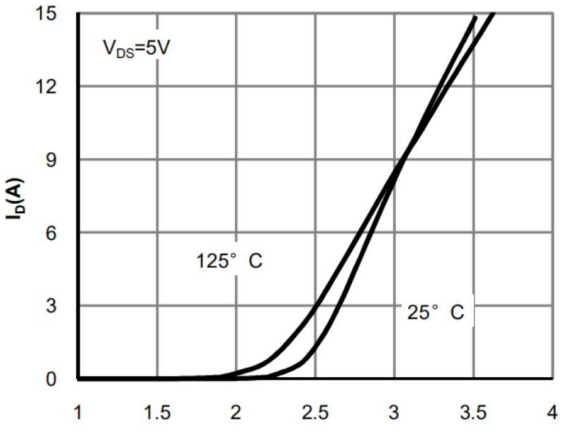


Figure 2: Transfer Characteristics

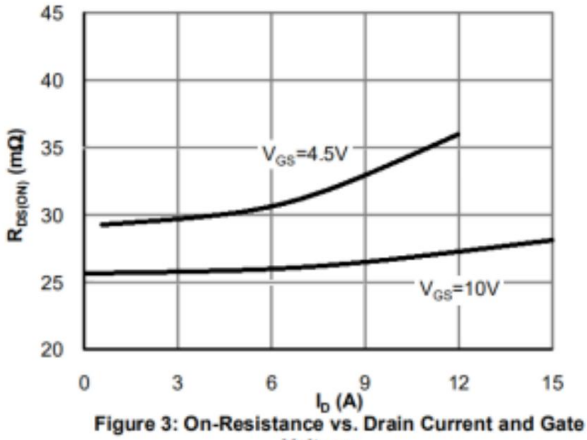


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

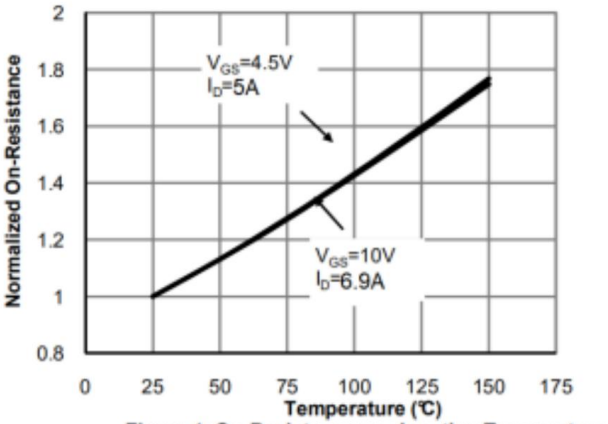


Figure 4: On-Resistance vs. Junction Temperature

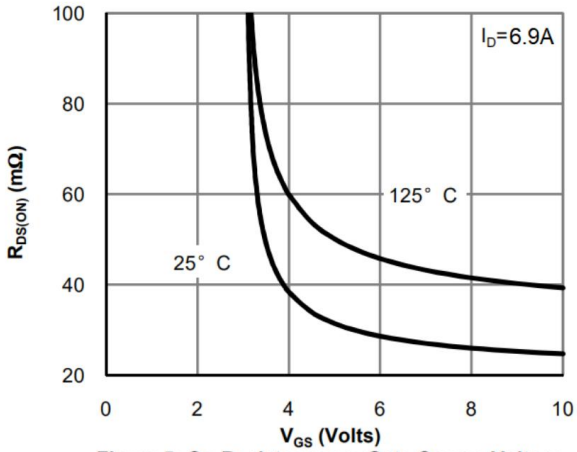


Figure 5: On-Resistance vs. Gate-Source Voltage

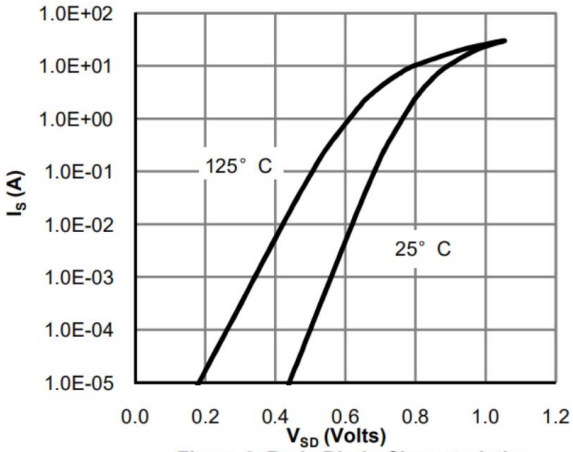


Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve

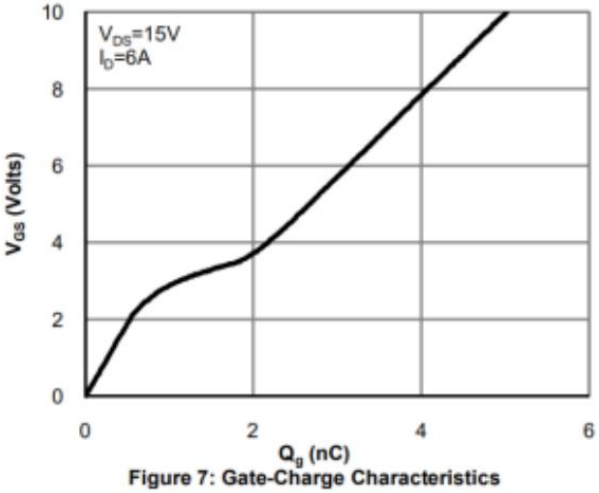


Figure 7: Gate-Charge Characteristics

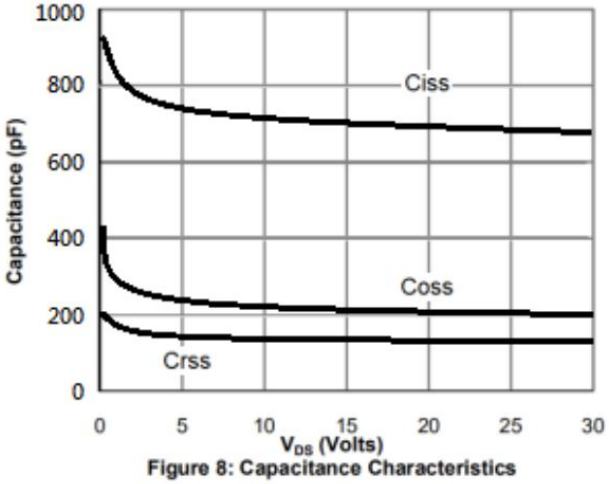


Figure 8: Capacitance Characteristics

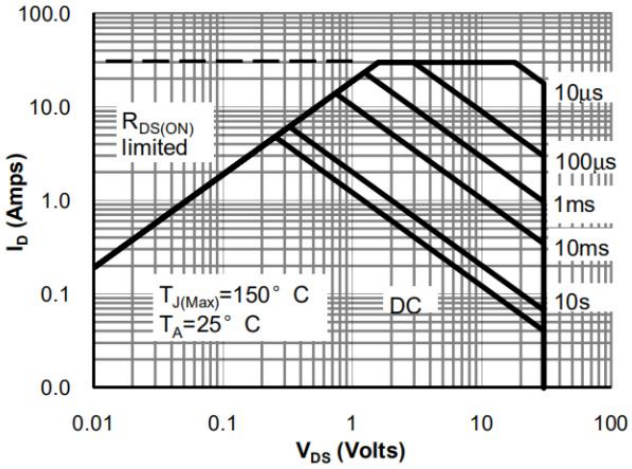
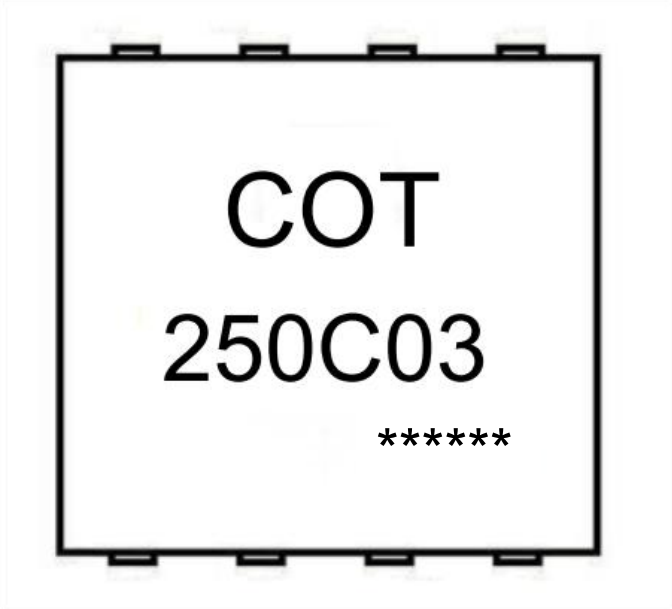


Figure 9: Maximum Forward Biased Safe Operating Area

Marking Instructions



Note:

COT: Company Logo

250C03: Product Type.

******: Lot No. Code, code change with Lot No.

Packaging SPEC

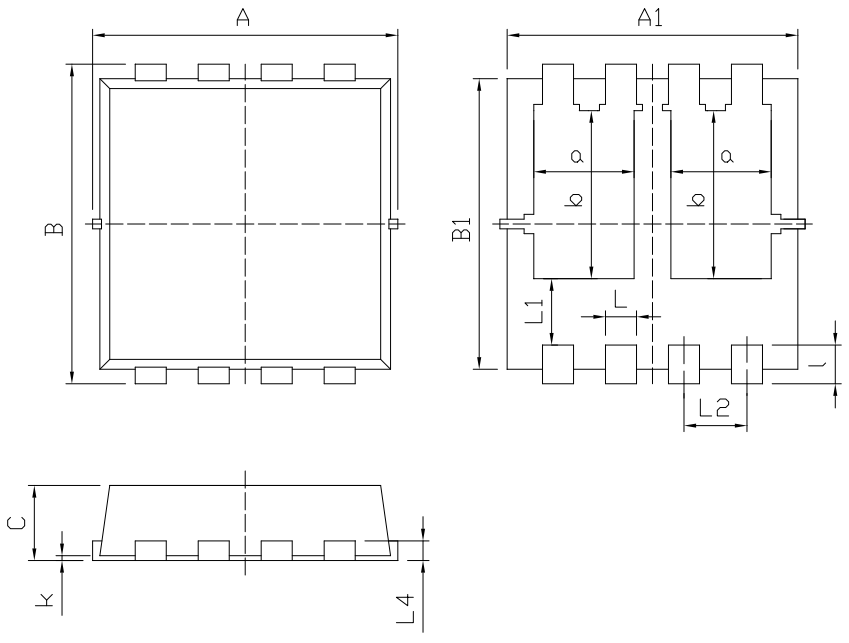
REEL INFORMATION

Package Type	Units					Dimension (unit：mm³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
PDFN3×3-8L	5,000	2	10,000	6	60,000	13″ ×12	360×360×50	380×335×366

Package Outline Dimensions

PDFN3X3-8L

Unit:mm



Dimensions In Millimeterer			
Symbol	MIN	TYP	MAX
A	3.20	3.30	3.40
A1	3.10	3.15	3.20
B	3.20	3.30	3.40
B1	2.95	3.00	3.05
C	0.75	0.80	0.85
L	0.25	0.30	0.35
L1	-	-	0.75
L2	0.55	0.65	0.75
L4	0.14	0.15	0.20
a	0.935	1.035	1.135
b	1.635	1.735	1.835
k	0.00	-	0.05
l	0.30	0.40	0.50

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