Description

This -35A,-30V P-Channel MOSFET in a PDFN 3×3-8L Plastic Package.

Applications

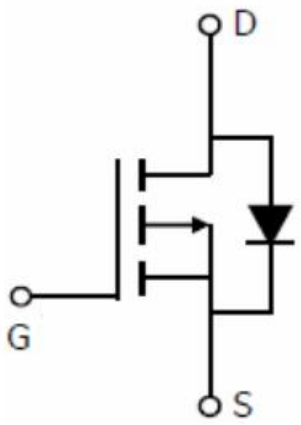
These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies.

Features

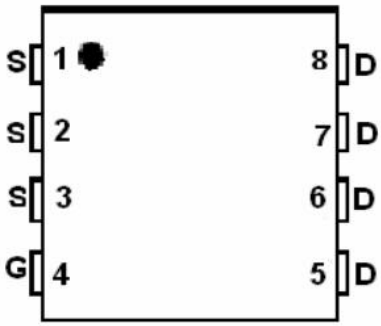
- V_{DS} (V) = -30V
- I_D =-35 A (V_{GS} = ±20V)
- $R_{DS(ON)}$@10V≤12mR(Typ.10.5mR)
- Halogen-Free Product

V_{DSS}	$R_{DS(on)}$ Typ	I_D
-30V	10.5mΩ	-35A

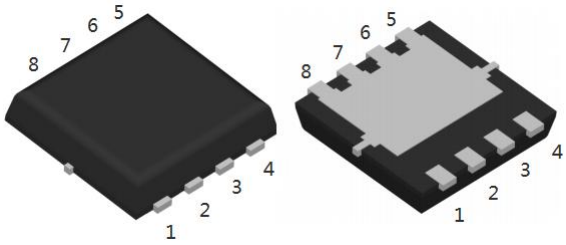
Equivalent Circuit & Pinning



Schematic diagram



Pin assignment



PDFN3X3-8L

Absolute Maximum Ratings(Ta=25℃)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	-30	V
Drain Current		I_D(Tc=25℃)	-35	A
Drain Current - Pulsed		I_{DM}	-80	A
Gate-Source Voltage		V_{GS}	±20	V
Avalanche Current		I_{AS}	17	A
Single Pulsed Avalanche Energy		E_{AS}	151	mJ
Power Dissipation		P_D(Tc=25℃)	28	W
Operating and Storage Temperature Range		T_J,T_{stg}	-55 to 150	℃
Junction-to-Ambient	t≤10	$R_{\theta JA}$	25	℃/W
Junction-to-Ambient	Steady-State		55	
Junction-to-Case	Steady-State	$R_{\theta JC}$	4.5	

Electrical Characteristics(Ta=25℃)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=-250μA V_{GS}=0V	-30	-36		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-30V V_{GS}=0V			-1	μA
Gate-Body leakage current	I_{GSS}	V_{DS}=0V V_{GS}=±20V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=-250μA	-1.0	-1.7	-2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=-10V I_D=-20A		10.5	12	mΩ
		V_{GS}=-4.5V I_D=-10A		16.5	18	
Diode Forward Voltage	V_{SD}	I_S=-1A V_{GS}=0V			-1.2	V
Gate resistance	R_g	V_{GS}=0V V_{DS}=0V f=1MHz		7.5	10	Ω
Input Capacitance	C_{iss}	V_{GS}=0V V_{DS}=-25V f=1MHz		2100		pF
Output Capacitance	C_{oss}			340		
Reverse Transfer Capacitance	C_{rss}			210		
Total Gate Charge	Q_g(10V)	V_{GS}=-10V V_{DS}=-15V I_D=-17A		35		nC
Total Gate Charge	Q_g(4.5V)			17		
Gate-Source Charge	Q_{gs}			5.7		
Gate-Drain Charge	Q_{gd}			8.8		
Turn-on Delay Time	$t_{d(ON)}$	V_{GS}=-10V V_{DS}=-15V R_L=0.9Ω R_{GEN}=3Ω		11		ns
Turn-on Rise Time	t_r			7.5		
Turn-off Delay Time	$t_{d(OFF)}$			43.5		
Turn-off Fall Time	t_f			17.5		

Electrical Characteristic Curve

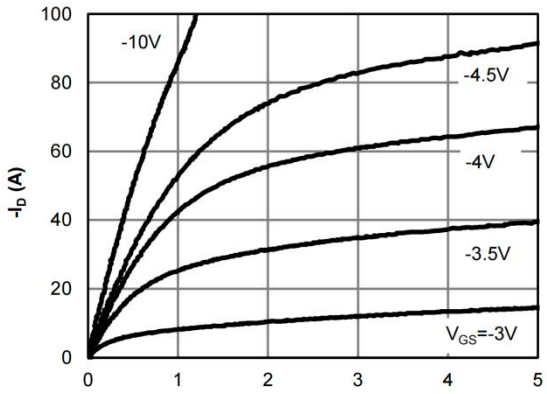


Figure 1: On-Region Characteristics

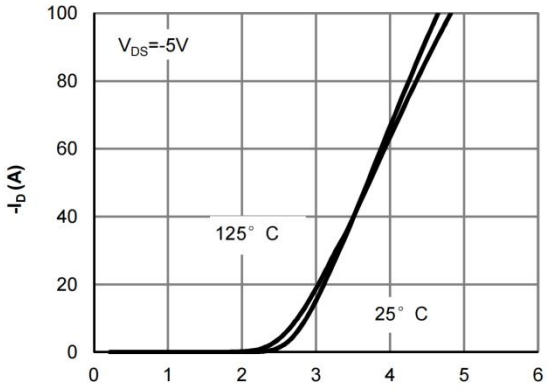


Figure 2: Transfer Characteristics

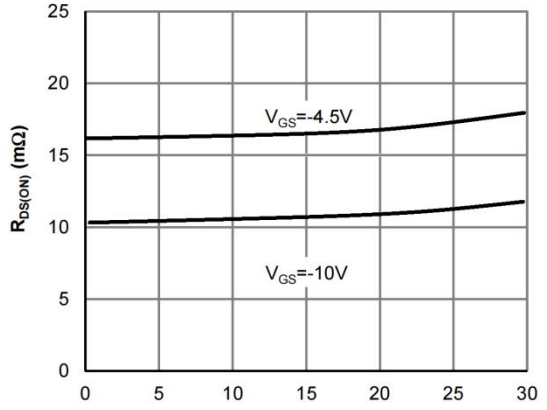


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

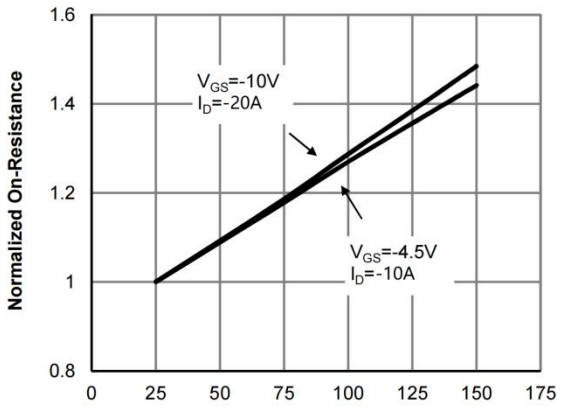


Figure 4: On-Resistance vs. Junction Temperature

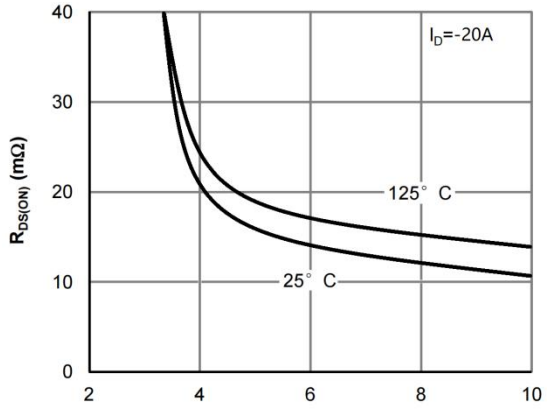


Figure 5: On-Resistance vs. Gate-Source Voltage

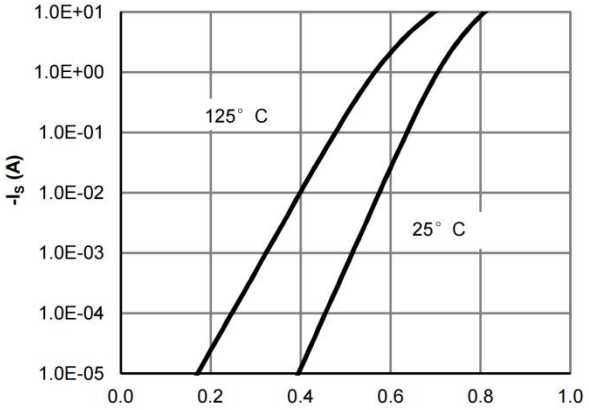


Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve

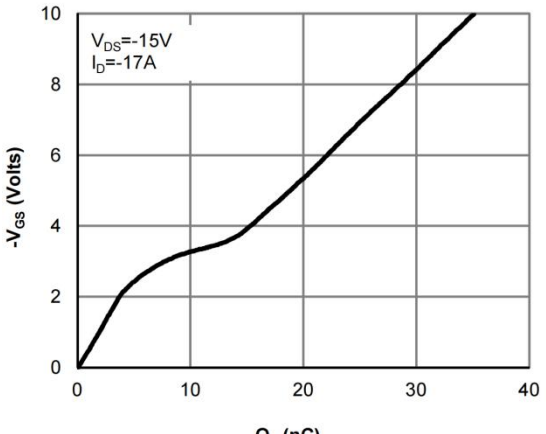


Figure 7: Gate-Charge Characteristics

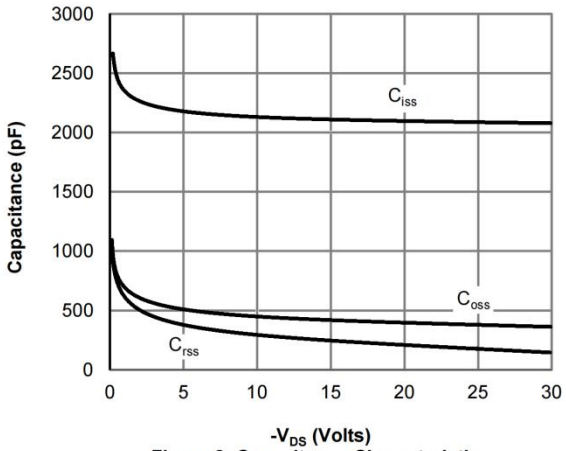
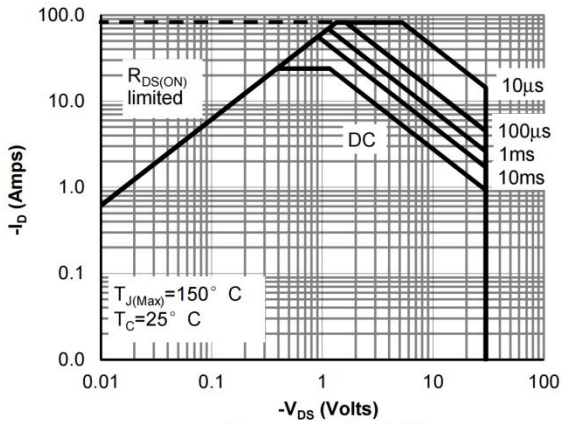


Figure 8: Capacitance Characteristics



$-V_{GS}$> or equal to -4.5V
Figure 9: Maximum Forward Biased Safe Operating Area

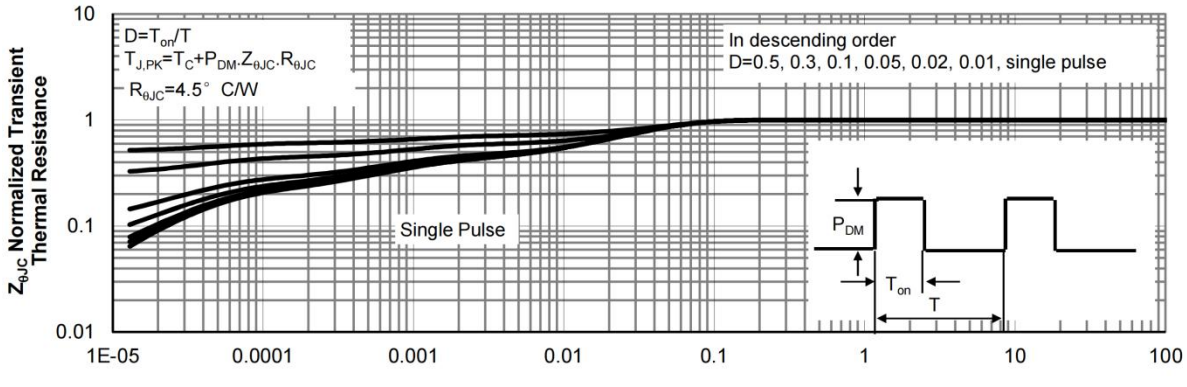
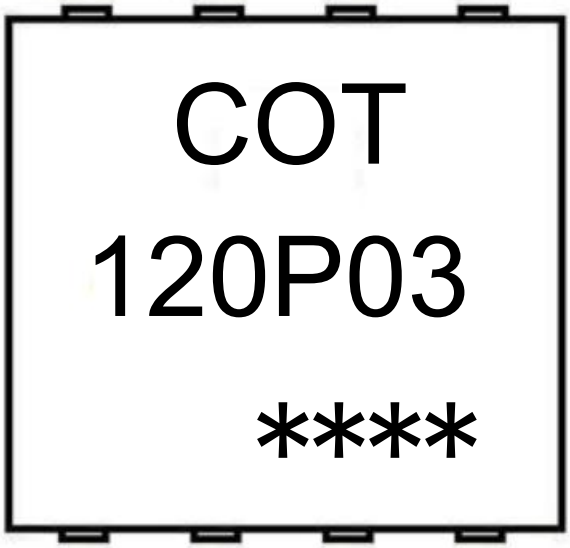


Figure 10: Normalized Maximum Transient Thermal Impedance

Marking Instructions



Note:

COT:	Company Logo
120P03:	Product Type.
****:	Lot No. Code, code change with Lot No.

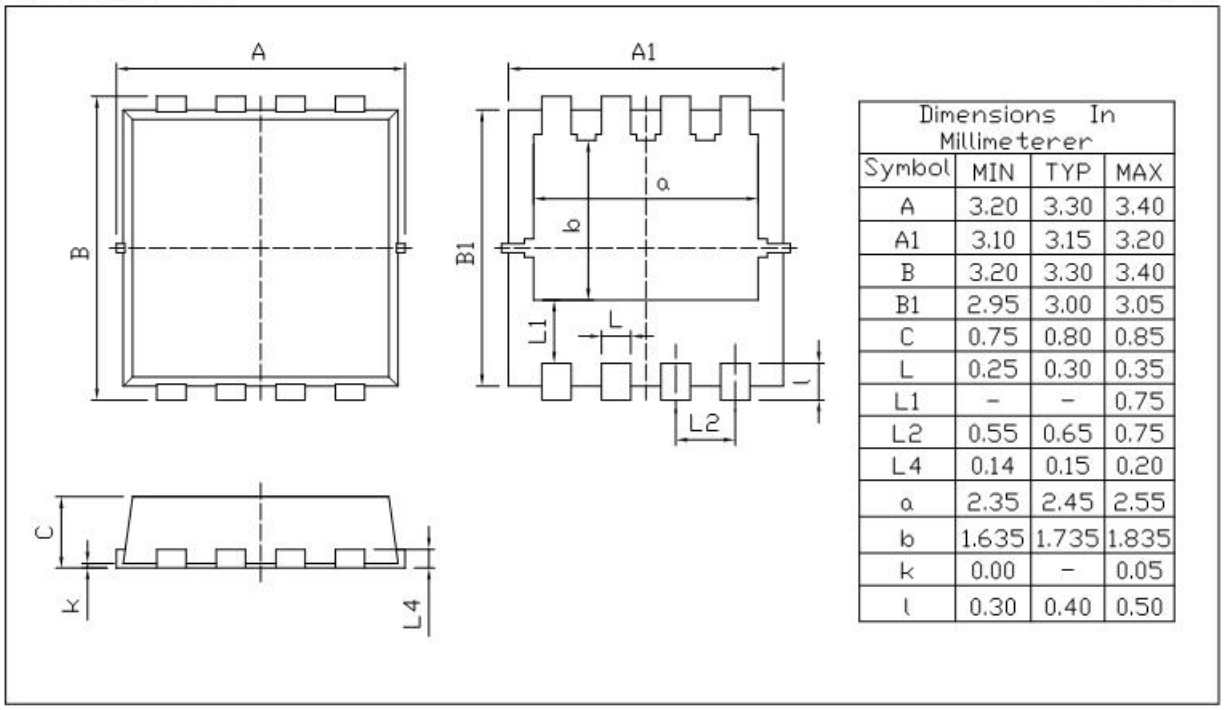
Packaging SPEC.

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	2.35	2.45	2.55
b	1.635	1.735	1.835
k	0.00	-	0.05
l	0.30	0.40	0.50