

Description

This N-Channel Enhancement Mode Field Effect Transistor in a PDFN3×3A-8L Plastic Package.

Features

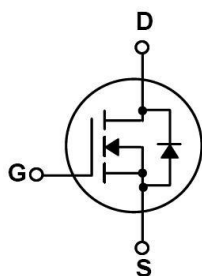
- $V_{DS} (V) = 30V$
- $I_D = 20 A (V_{GS} = \pm 20V)$
- $R_{DS(ON)}@10V \leq 13m\Omega (Typ. 11m\Omega)$
- Halogen-Free Product

Applications

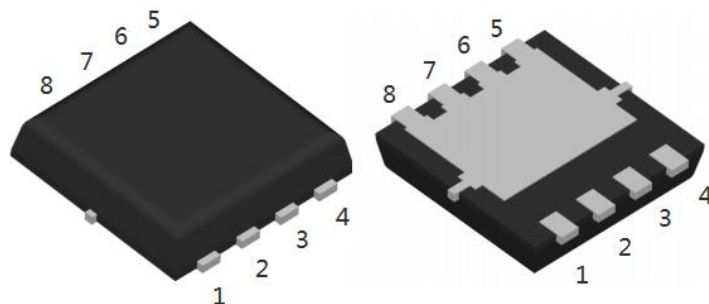
These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies

V_{DSS}	$R_{DS(on)}$ Typ	I_D
30V	11m Ω	20A

Equivalent Circuit



Pinning



出脚	定义
Pin1	S
Pin2	S
Pin3	S
Pin4	G
Pin5	D
Pin6	D
Pin7	D
Pin8	D

Marking

See Marking Instruction

Absolute Maximum Ratings(Ta=25°C)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	30	V
Drain Current		$I_D(T_C=25^{\circ}\text{C})$	20	A
Drain Current - Pulsed		I_{DM}	55	A
Gate-Source Voltage		V_{GS}	± 20	V
Single Pulsed Avalanche Energy		E_{AS}	199	mJ
Avalanche Current		I_{AS}	12.9	A
Power Dissipation		$P_D(T_C=25^{\circ}\text{C})$	15.5	W
Operating and Storage Temperature Range		T_J, T_{stg}	-55 to 150	$^{\circ}\text{C}$
Junction-to-Ambient	$t \leq 10$	$R_{\theta JA}$	30	$^{\circ}\text{C/W}$
Junction-to-Ambient	Steady-State		60	
Junction-to-Case	Steady-State	$R_{\theta JC}$	8	

Electrical Characteristics(Ta=25℃)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$	$I_D=250\mu A$	30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V$	$V_{GS}=0V$			1	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$	$V_{DS}=0V$			± 0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$	$I_D=250\mu A$	1.0	1.8	3.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$	$I_D=20A$		11	13	m Ω
		$V_{GS}=4.5V$	$I_D=10A$		16	20	m Ω
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$	$I_S=1A$			1.2	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $f=1.0MHz$	$V_{GS}=0V$		666		pF
Output Capacitance	C_{oss}				26		
Reverse Transfer Capacitance	C_{rss}				63		
Gate resistance	R_g	$V_{GS}=0V$ $f=1MHz$	$V_{DS}=0V$		1.7		Ω
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10V$ $I_D=8A$	$V_{DS}=15V$		13.6		nC
Total Gate Charge	$Q_{g(4.5V)}$				6.8		
Gate Source Charge	Q_{gs}				1.6		
Gate Drain Charge	Q_{gd}				3.6		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $R_L=1.87\Omega$	$V_{DS}=15V$ $R_{GEN}=4.5\Omega$		5		ns
Turn-On Rise Time	t_r				3.5		
Turn-Off Delay Time	$t_{d(off)}$				22		
Turn-Off Fall Time	t_f				4.5		

Electrical Characteristic Curve

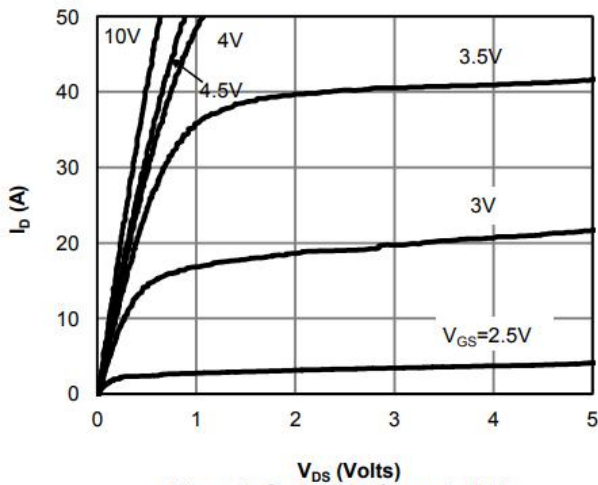


Figure 1: On-Region Characteristics

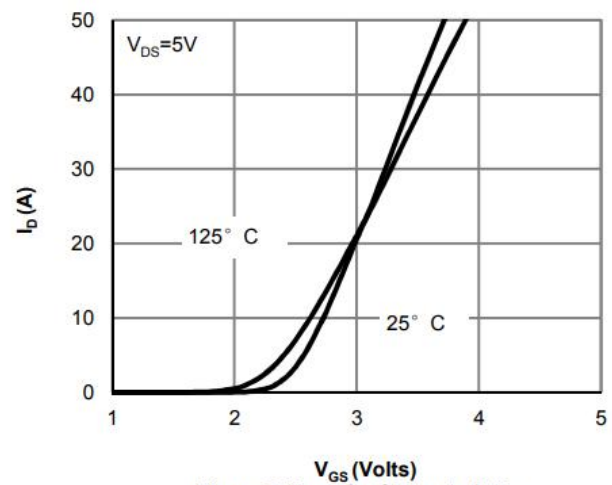


Figure 2: Transfer Characteristics

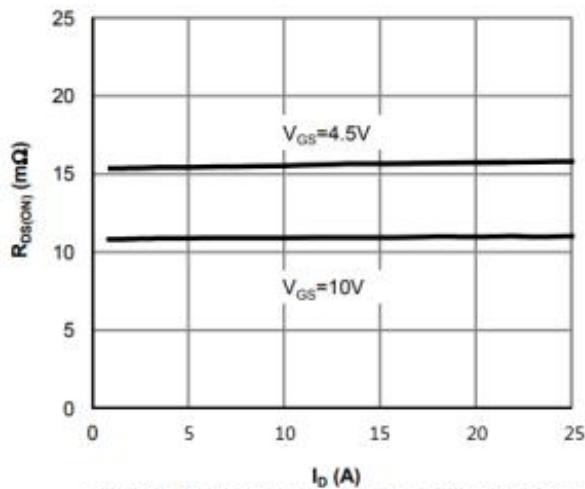


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

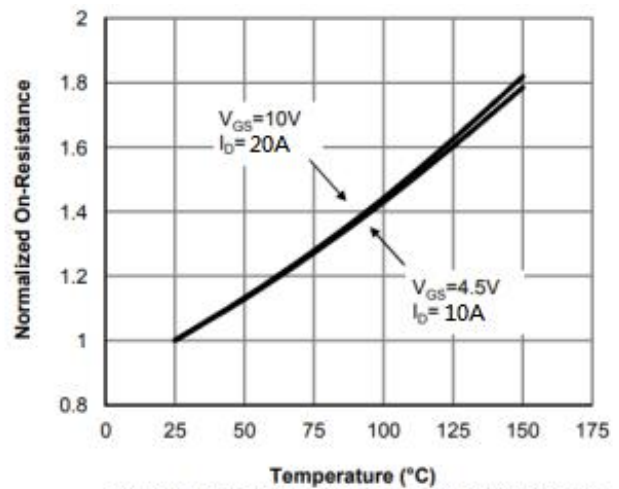


Figure 4: On-Resistance vs. Junction Temperature

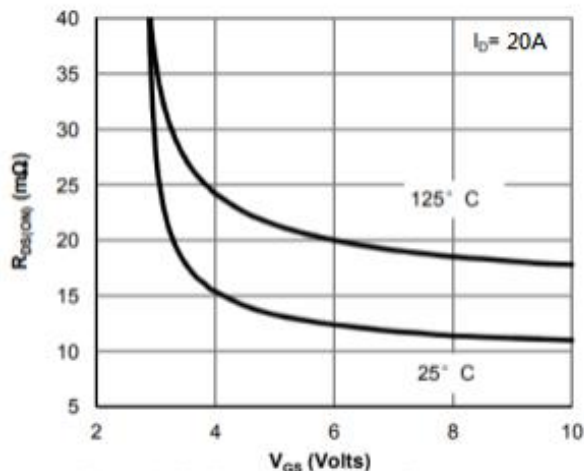


Figure 5: On-Resistance vs. Gate-Source Voltage

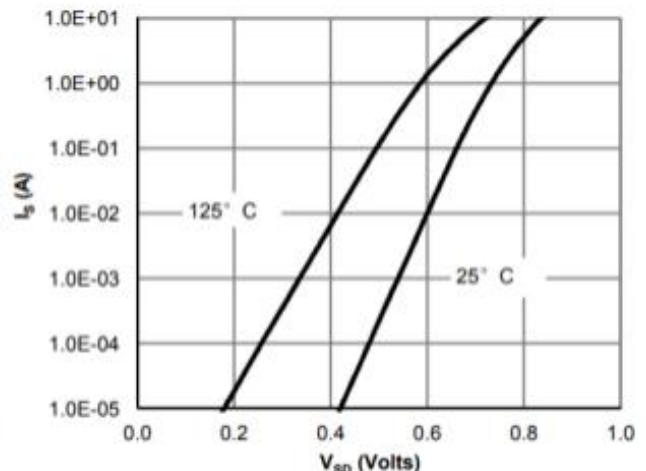


Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve

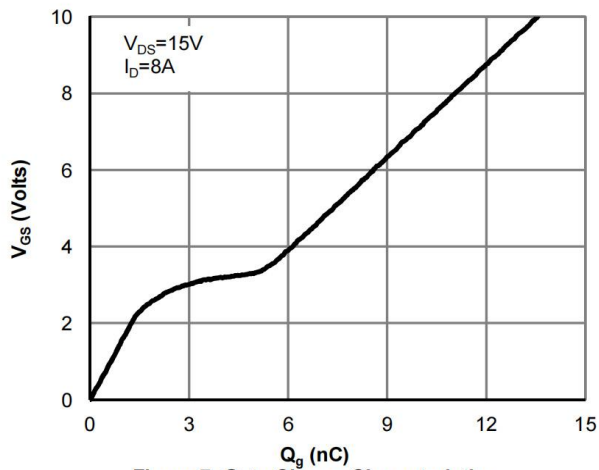


Figure 7: Gate-Charge Characteristics

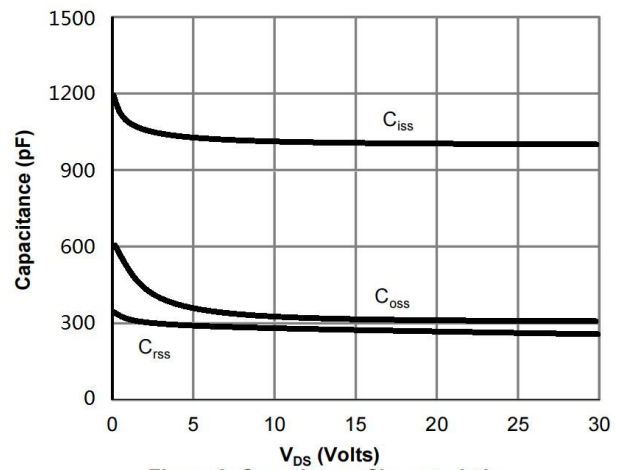


Figure 8: Capacitance Characteristics

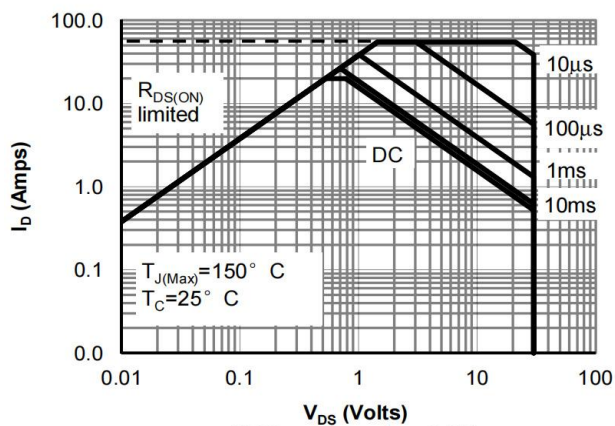


Figure 9: Maximum Forward Biased Safe Operating Area

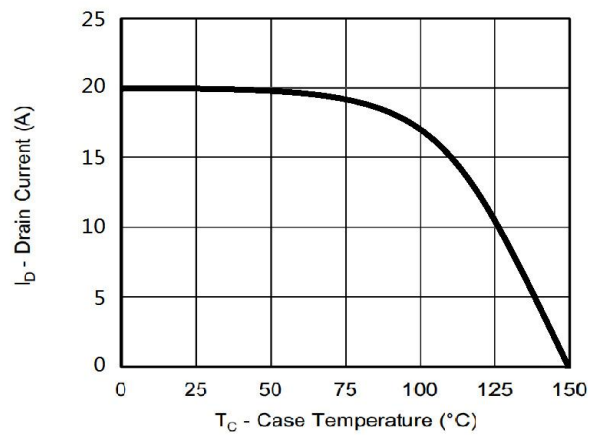


Figure 10: Maximum Continuous Drain Current vs Case Temperature

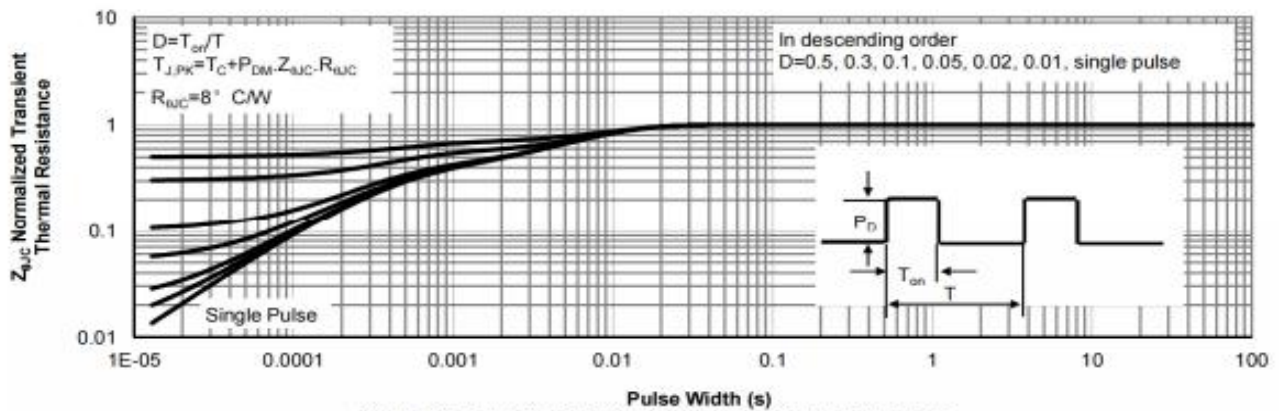
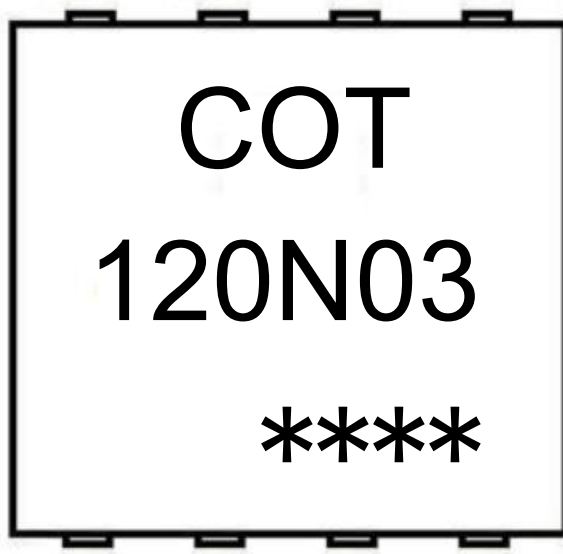


Figure 11: Normalized Maximum Transient Thermal Impedance

Marking Instructions



Note:

COT: Company Logo

120N03: Product Type.

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

Packaging SPEC.

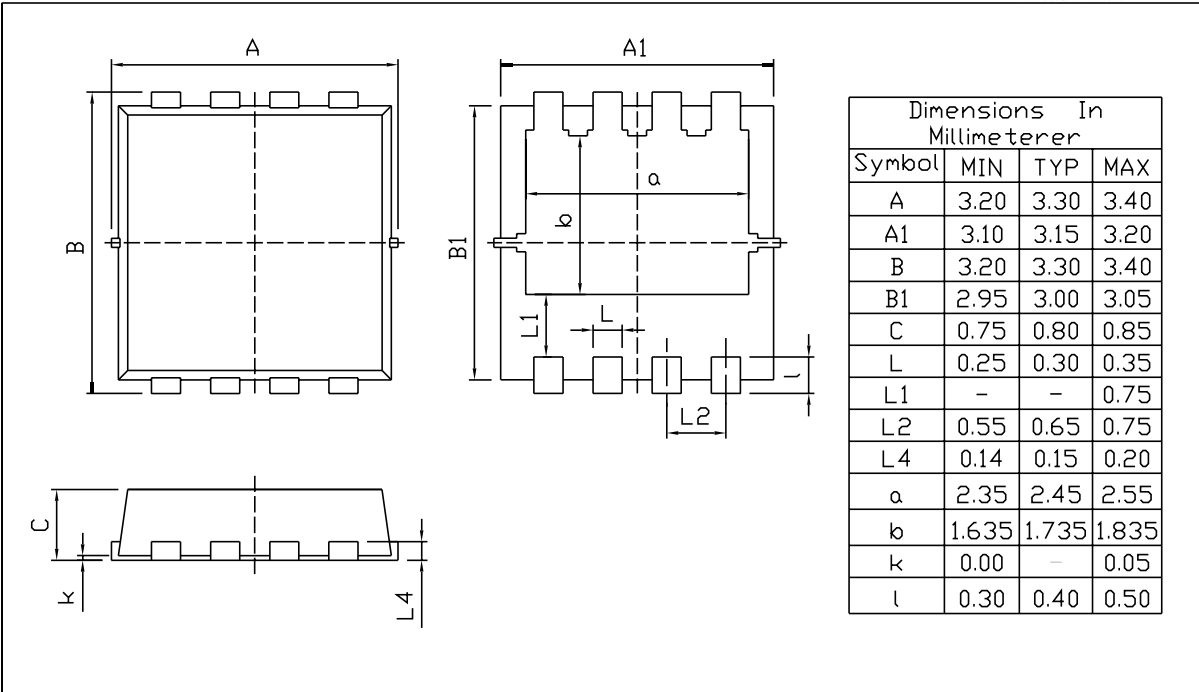
REEL INFORMATION

Package Type	Units					Dimension (unit:mm ³)		
	Units/ Reel	Reels/ Inner Box	Units/ Inner Box	InnerBoxes/ Outer Box	Units/ Outer Box	Reel	Inner Box	Outer Box
PDFN 3×3A-8L	5,000	2	10,000	6	60,000	13" ×12	360×360×50	380×335×366

Package Dimensions

PDFN3X3A-8L

Unit:mm



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