

Descriptions

This 30V 30A is N-Channel Enhancement Mode Field Effect Transistor in a PDFN 3×3A-8L Plastic Package.

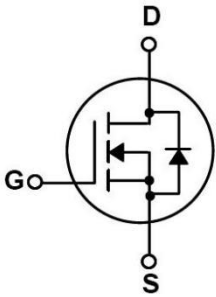
Features

- $V_{DS} (V) = 30V$
- $I_D = 30 A (V_{GS} = \pm 20V)$
- $R_{DS(ON)}@10V \leq 9mR (Typ. 8mR)$
- Halogen-free Product

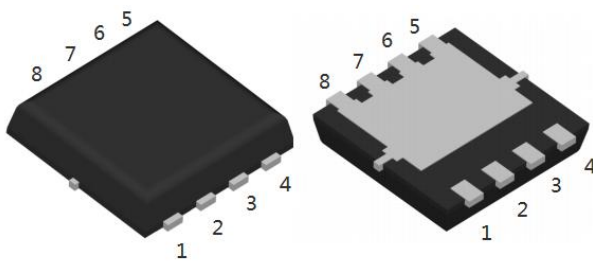
Applications

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

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 Instructions.

Absolute Maximum Ratings(Ta=25°C)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	30	V
Drain Current		$I_D(T_C=25^\circ\text{C})$	30	A
Drain Current - Pulsed		I_{DM}	90	A
Gate-Source Voltage		V_{GSS}	± 20	V
Single Pulsed Avalanche Energy		E_{AS}	48	mJ
Avalanche Current		I_{AS}	8	A
Power Dissipation		$P_D(T_C=25^\circ\text{C})$	20.5	W
Operating and Storage Temperature Range		T_J, T_{stg}	-55 to 150	°C
Junction-to-Ambient	$t \leq 10$	$R_{\theta JA}$	30	°C/W
Junction-to-Ambient	Steady-State		60	
Junction-to-Case	Steady-State	$R_{\theta JC}$	5.2	

Electrical Characteristics(Ta=25°C)

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	1.9	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=20A$		8	9	$m\Omega$
		$V_{GS}=4.5V$ $I_D=10A$		12	15	$m\Omega$
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=1A$			1.2	V
Input Capacitance	C_{iss}	$V_{DS}=15V$ $V_{GS}=0V$ $f=1.0MHz$		845		pF
Output Capacitance	C_{oss}			135		
Reverse Transfer Capacitance	C_{rss}			105		
Gate resistance	R_g	$V_{GS}=0V$ $V_{DS}=0V$ $f=1MHz$		2.9		Ω
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10V$ $V_{DS}=15V$ $I_D=17A$		22		nC
Total Gate Charge	$Q_{g(4.5V)}$			10		
Gate Source Charge	Q_{gs}			4.7		
Gate Drain Charge	Q_{gd}			4		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=15V$ $R_L=0.75\Omega$ $R_{GEN}=3\Omega$		6.5		ns
Turn-On Rise Time	t_r			2.5		
Turn-Off Delay Time	$t_{d(off)}$			22.5		
Turn-Off Fall Time	t_f			3		

Electrical Characteristic Curve

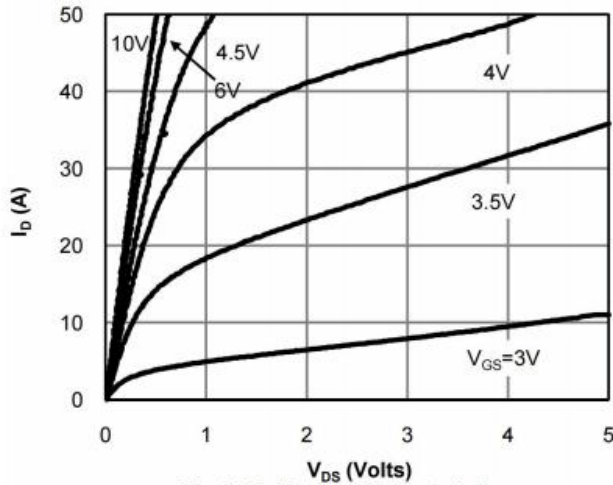


Fig 1: On-Region Characteristics

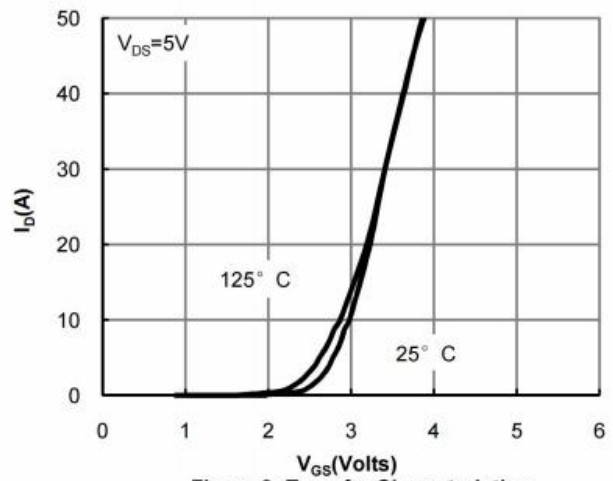


Figure 2: Transfer Characteristics

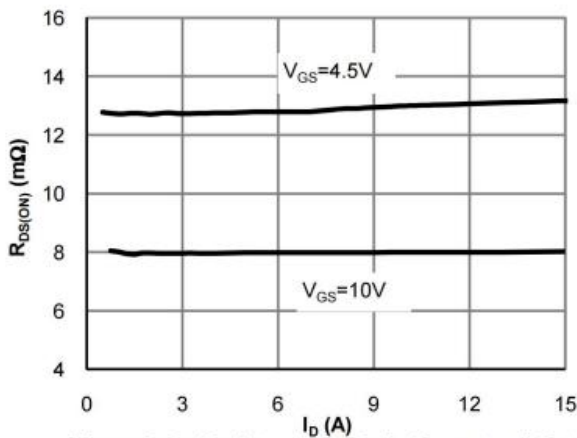


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

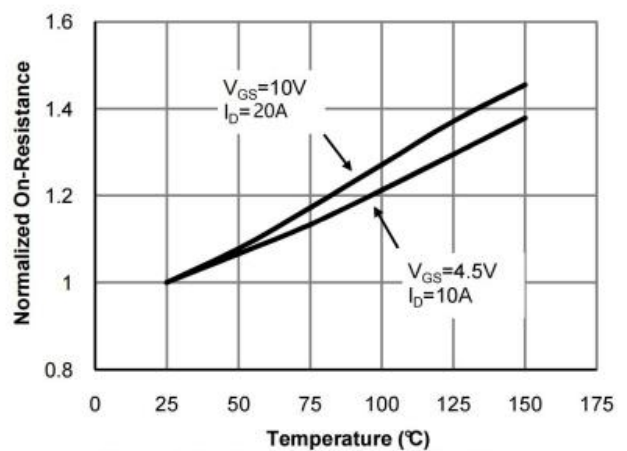


Figure 4: On-Resistance vs. Junction Temperature

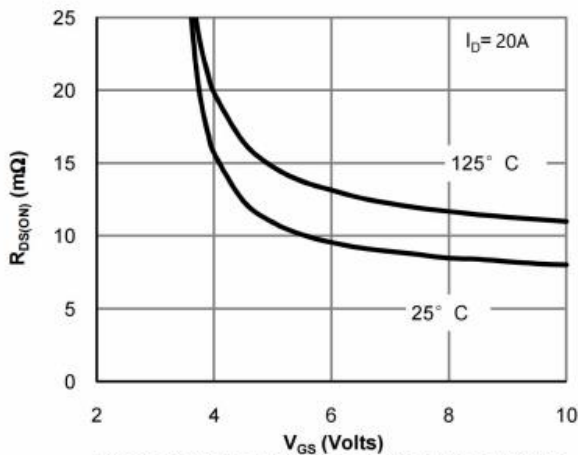


Figure 5: On-Resistance vs. Gate-Source Voltage

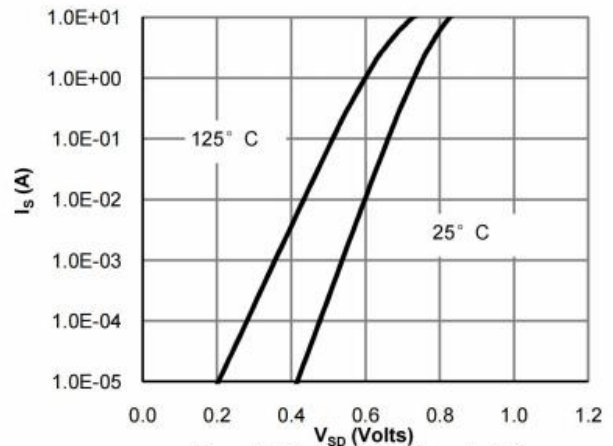


Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve

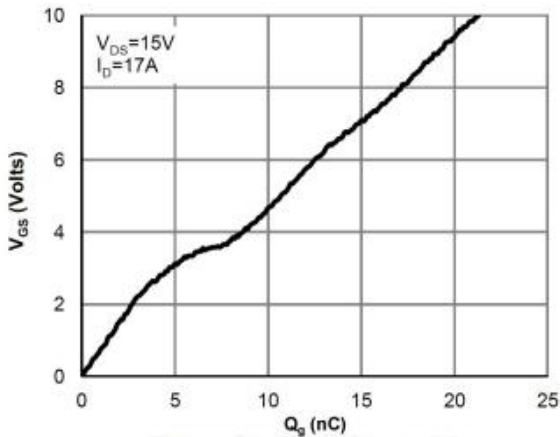


Figure 7: Gate-Charge Characteristics

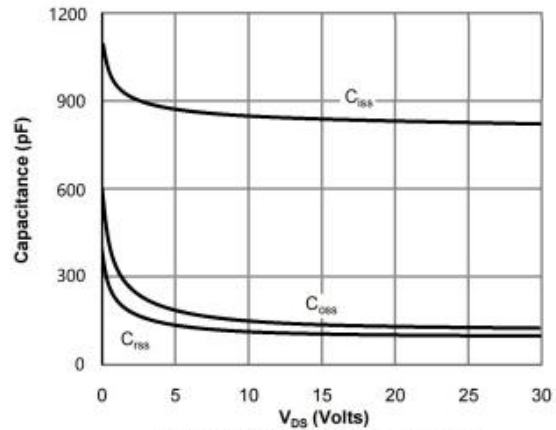


Figure 8: Capacitance Characteristics

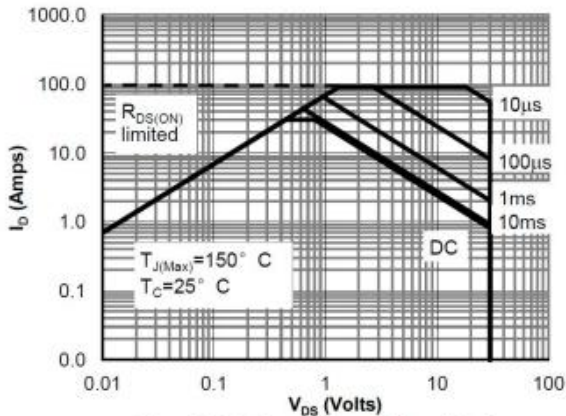


Figure 9: Maximum Forward Biased Safe Operating Area

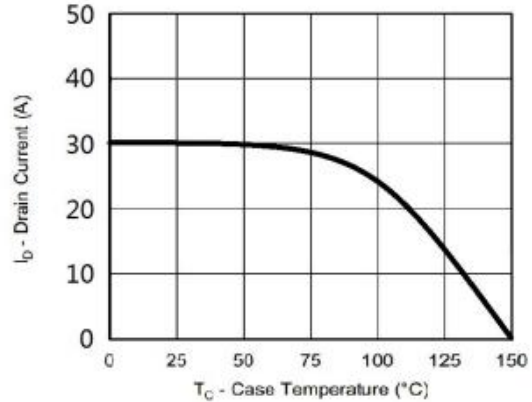


Figure 10: Maximum Continuous Drain Current vs Case Temperature

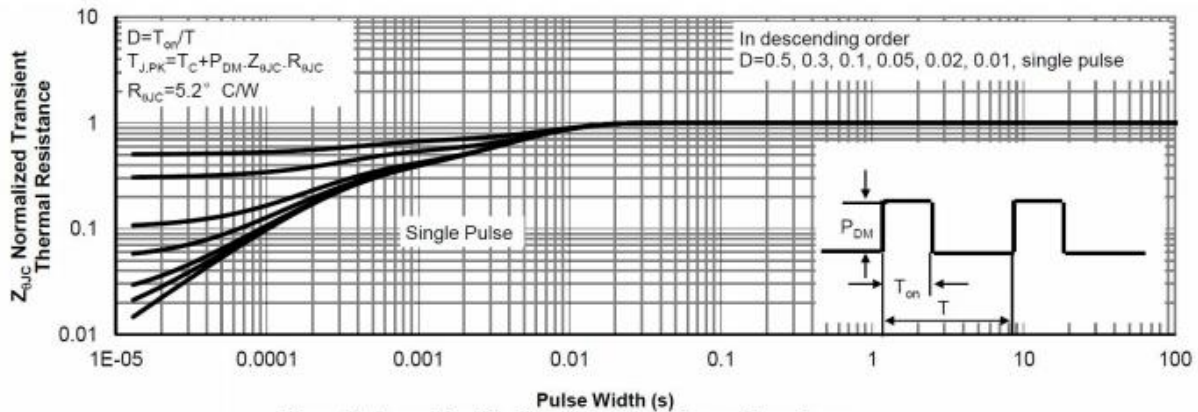
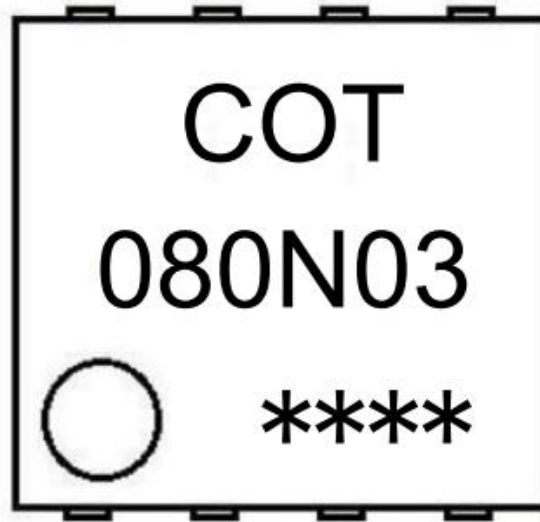


Figure 11: Normalized Maximum Transient Thermal Impedance

Marking Instructions



Note:

COT: Company Code

080N03: Product Type Code

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

Packaging SPEC

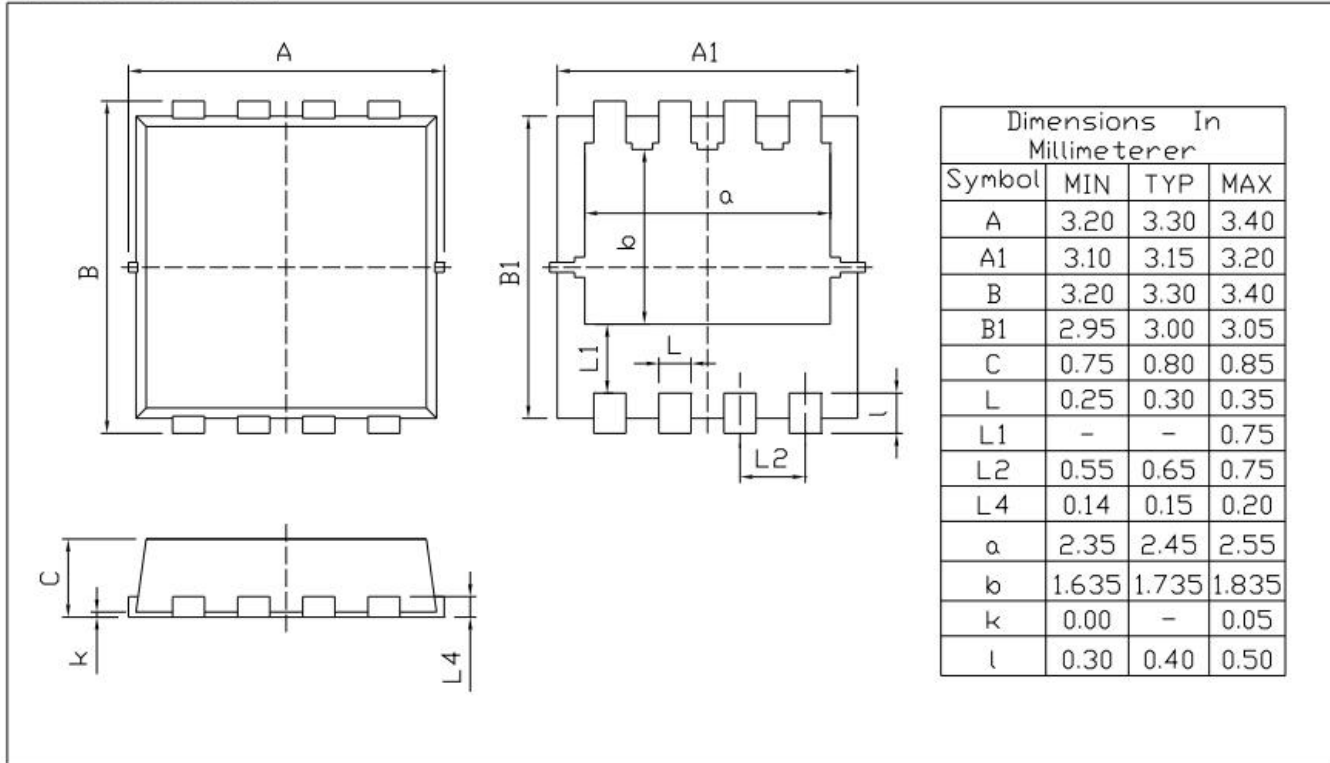
REEL INFORMATION

Package Type	Units					Dimension (unit: mm ³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/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 Outline Dimensions

PDFN3X3A-8L

Unit:mm



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