

Descriptions

This 100V 50A N-Channel MOSFET in a PDFN5×6 Plastic Package .

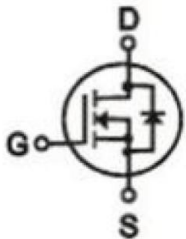
Features

- Low $R_{DS(ON)}$ to minimize conductive loss
- Low gate charge for fast switching
- Low thermal resistance
- Halogen-free product

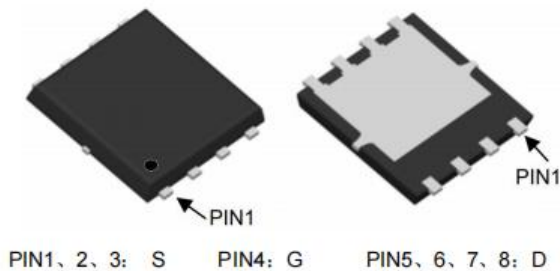
Applications

- For boost converters and synchronous rectifiers for consumer
- Telecom
- Industrial power supplies and LED backlighting

Equivalent Circuit



Pinning



Pin	极性
1	S
2	S
3	S
4	G
5	D
6	D
7	D
8	D

Pinning

See Marking Instructions

Absolute Maximum Ratings(Ta=25°C)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	100	V
Drain Current - Continuous		I_D	50	A
Drain Current – Pulsed		I_{DM}	200	A
Gate-Source Voltage		V_{GS}	±20	V
Power Dissipation		$P_D(T_c=25^\circ\text{C})$	48	W
Single Pulse Avalanche Energy(L=0.5mH)		E_{AS}	119	mJ
Avalanche Current(L=0.5mH)		I_{AS}	18.5	A
Junction and Storage Temperature Range		T_j, T_{stg}	-55 to 150	°C
Thermal resistance, junction - ambient	t ≤ 10s	$R_{\theta JA}$	25	°C/W
	Steady-State		55	
Thermal resistance, junction - case	Steady-State	$R_{\theta JC}$	2.6	

Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=250\mu A, V_{GS}=0V$	100	109		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=100V, V_{GS}=0V$			1.0	μA
Gate-Body leakage current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2	2.9	4	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=30A$		6.7	8	m Ω
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		2500		pF
Output Capacitance	C_{oss}			1250		
Reverse Transfer Capacitance	C_{rss}			110		
Gate resistance	R_g	$V_{GS}=0V, V_{DS}=0V$ $f=1MHz$		3.1		Ω
Total Gate Charge	Q_g	$V_{GS}=10V, V_{DS}=50V$ $I_D=20A$		25		nC
Gate Source Charge	Q_{gs}			6		
Gate Drain Charge	Q_{gd}			3.5		

Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{D(on)}$	$V_{GS}=10V, V_{DS}=50V,$ $R_L=2.5\Omega, R_{GEN}=3\Omega$		8.5		ns
Turn-On Rise Time	t_r			3		
Turn-Off Delay Time	$t_{D(off)}$			23		
Turn-Off Fall Time	t_f			3.5		

Electrical Characteristic Curve

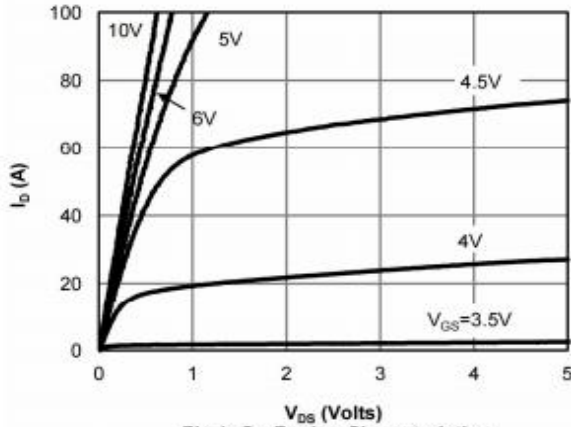


Fig 1: On-Region Characteristics

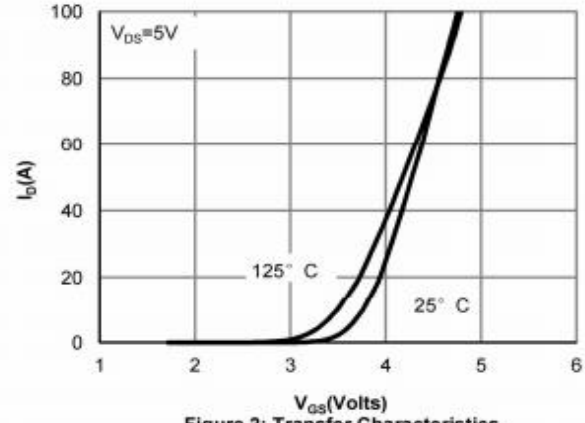


Figure 2: Transfer Characteristics

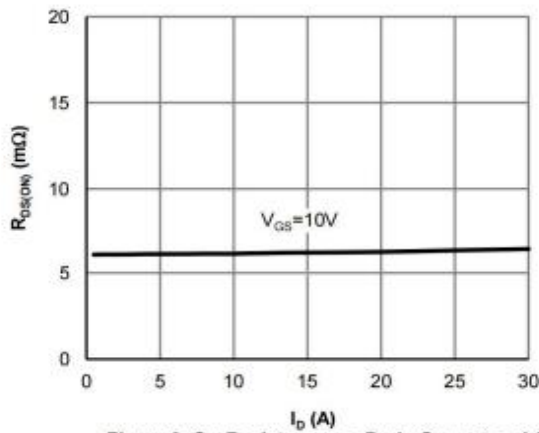


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

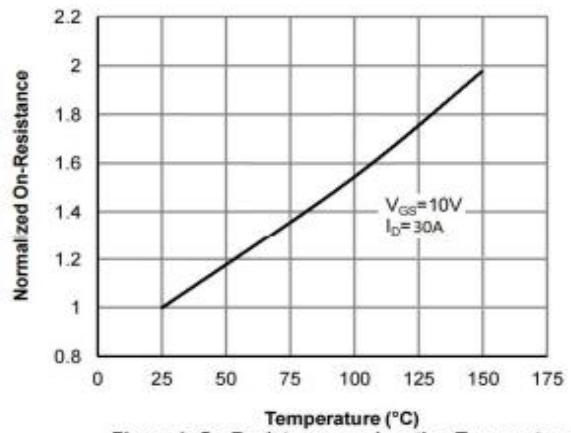


Figure 4: On-Resistance vs. Junction Temperature

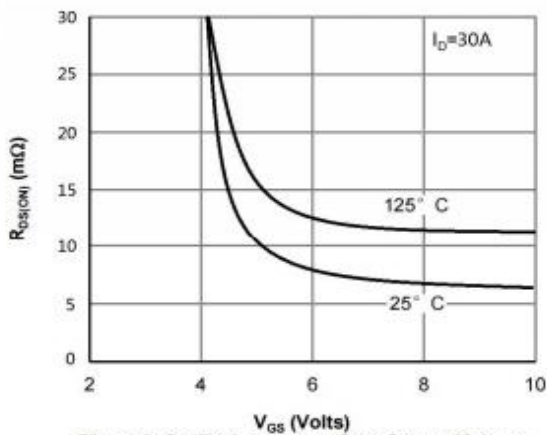


Figure 5: On-Resistance vs. Gate-Source Voltage

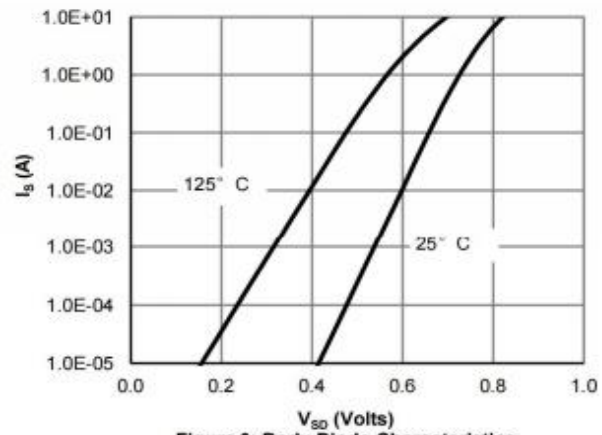


Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve

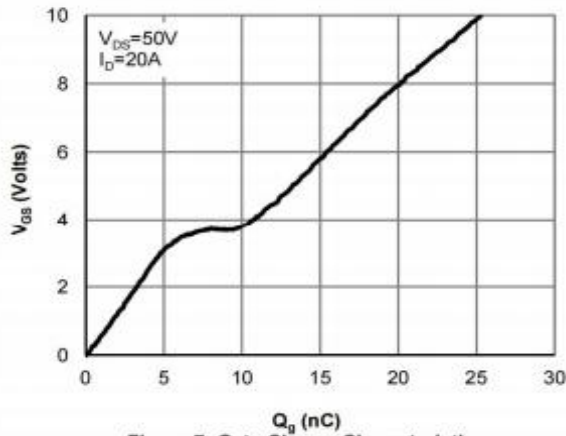


Figure 7: Gate-Charge Characteristics

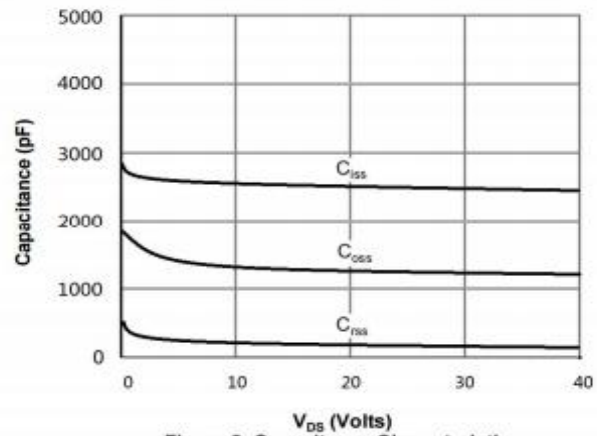


Figure 8: Capacitance Characteristics

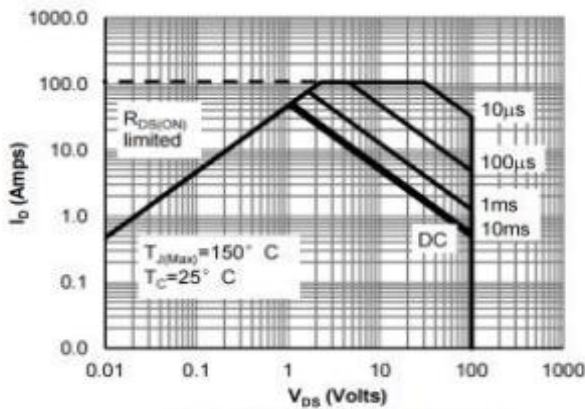


Figure 9: Maximum Forward Biased Safe Operating Area

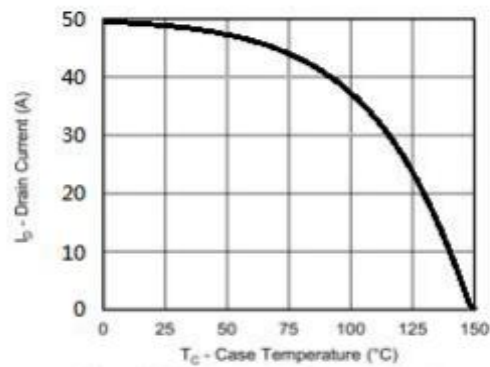


Figure 10: Maximum Continuous Drain Current vs Case Temperature

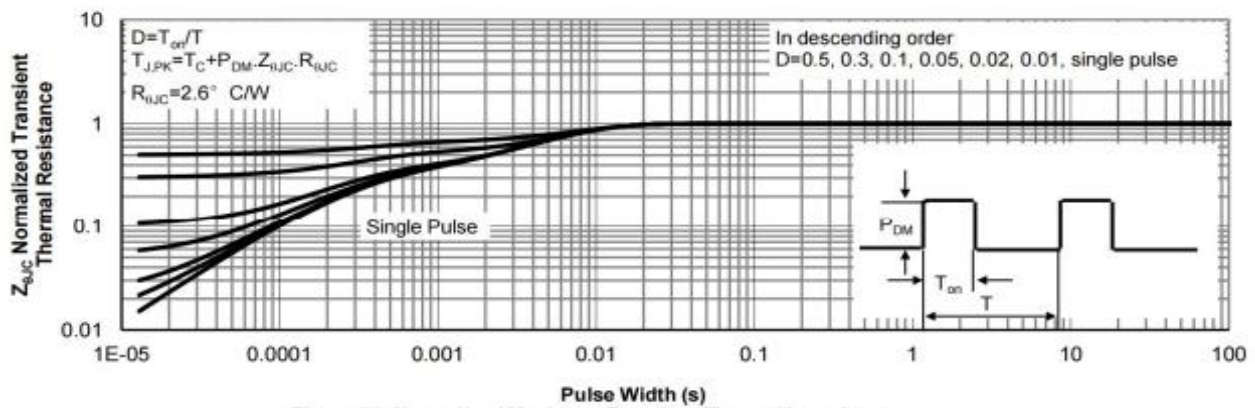
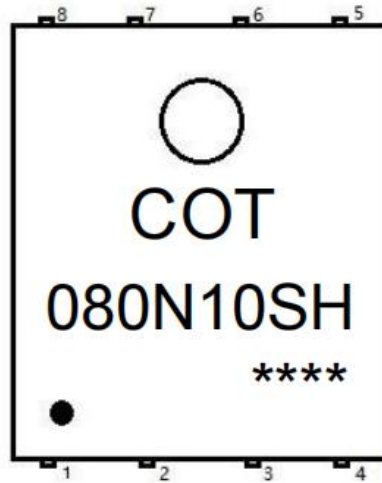


Figure 11: Normalized Maximum Transient Thermal Impedance

Marking Instructions



Note:

COT: Company Code

080N10SH: Product Type

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

Packaging SPEC

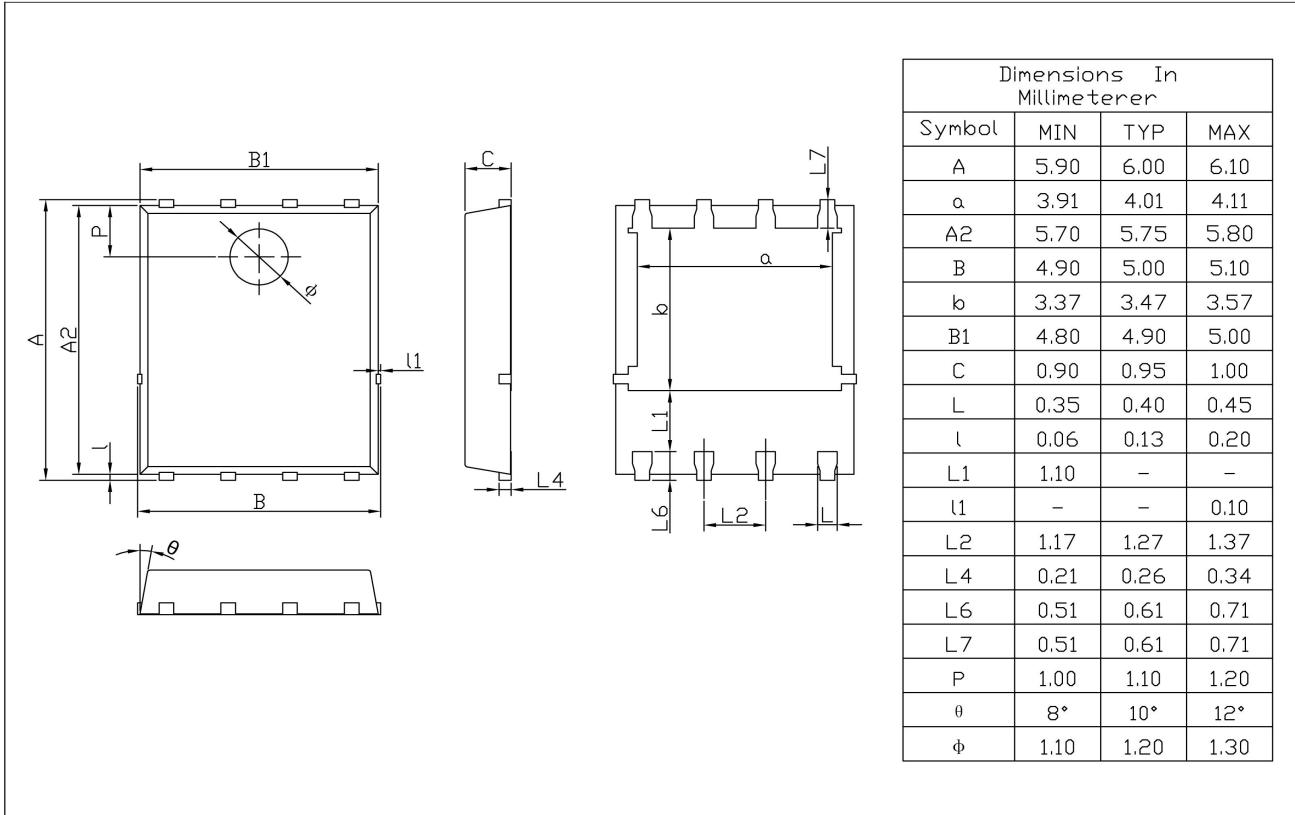
REEL

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
PDFN5×6	5000	2	10000	6	60000	13" × 12	360 × 360 × 50	380 × 335 × 366

Package Outline Dimensions

PDFN5 × 6

Unit:mm



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