

**Descriptions**

This 100V 168A N-Channel mosfet in a PDFN5×6 Plastic Package.

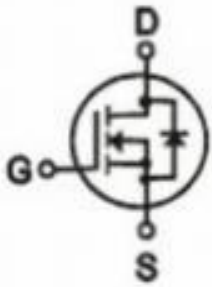
**Features**

- Low RDS(ON) to minimize conductive loss
- low Gate Charge for fast switching
- Low Thermal resistance
- Halogen Free Product

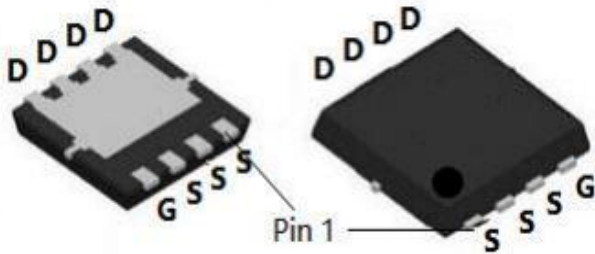
**Applications**

Battery management,high frequency point-of-load synchronous buck converter for MB/NB/UMPC/VGA, networking DC-DC power system,load switch

**Equivalent Circuit**



**Pinning**



PIN1、 2、 3: S      PIN4: G      PIN5、 6、 7、 8: D

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

### Absolute Maximum Ratings(Ta=25°C)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	100	V
Drain Current - Continuous	$I_D$	168	A
Drain Current – Pulsed	$I_{DM}$	400	A
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Power Dissipation	$P_D(T_c=25^\circ C)$	215	W
Single Pulse Avalanche Energy(L=0.5mH)	$E_{AS}$	563	mJ
Avalanche Current(L=0.5mH)	$I_{AS}$	37.5	A
Junction and Storage Temperature Range	$T_j, T_{stg}$	-55 to 150	°C
Thermal resistance, junction - ambient	$t \leq 10s$	20	°C/W
	Steady-State	50	
Thermal resistance, junction - case	Steady-State	0.58	

### 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	112		V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=100V, V_{GS}=0V$			1	$\mu A$
Gate-Body leakage current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$			$\pm 100$	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	$R_{DS(ON)}$	$V_{GS}=10V, I_D=20A$		3.5	4.0	m $\Omega$
Diode Forward Voltage	$V_{SD}$	$I_S=1A, V_{GS}=0V$			1.2	V
Input Capacitance	$C_{iss}$	$V_{DS}=25V, V_{GS}=0V, f=1.0MHz$		5550		pF
Output Capacitance	$C_{oss}$			2050		
Reverse Transfer Capacitance	$C_{rss}$			180		
Gate resistance	$R_g$	$V_{GS}=0V, V_{DS}=0V, f=1MHz$		1.7		$\Omega$
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10V, V_{DS}=50V, I_D=20A$		70		nC
Gate Source Charge	$Q_{gs}$			20		
Gate Drain Charge	$Q_{gd}$			10		

## Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=50V$ $R_L=2.5\ \Omega$ $R_{GEN}=3\ \Omega$		19		ns
Turn-On Rise Time	$t_r$			8		
Turn-Off Delay Time	$t_{d(off)}$			32		
Turn-Off Fall Time	$t_f$			11		

Electrical Characteristic Curve

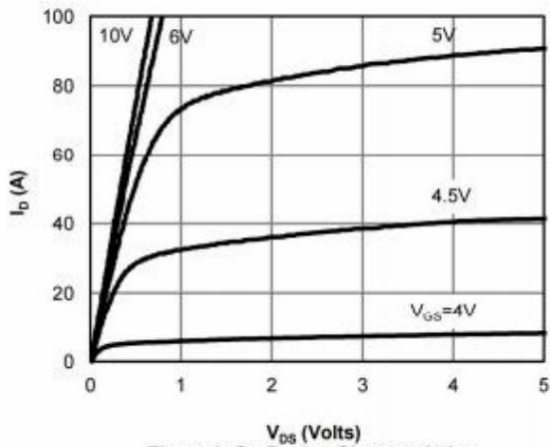


Figure 1: On-Region Characteristics

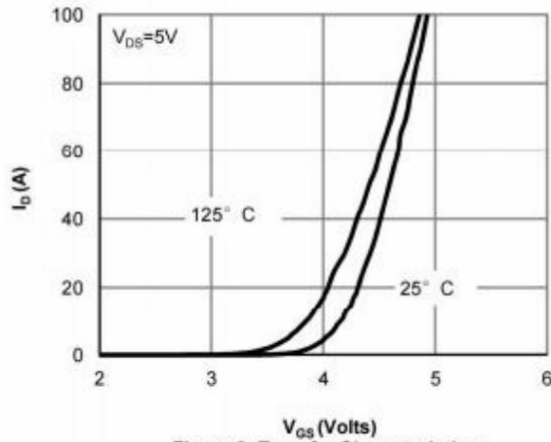


Figure 2: Transfer Characteristics

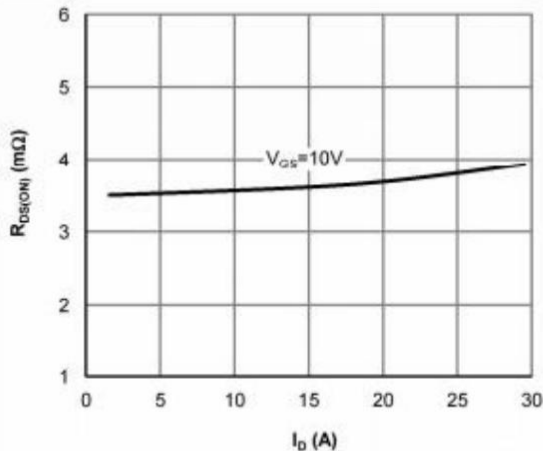


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

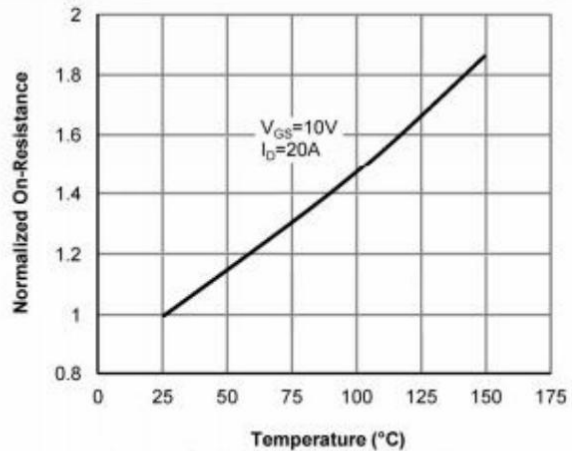


Figure 4: On-Resistance vs. Junction Temperature

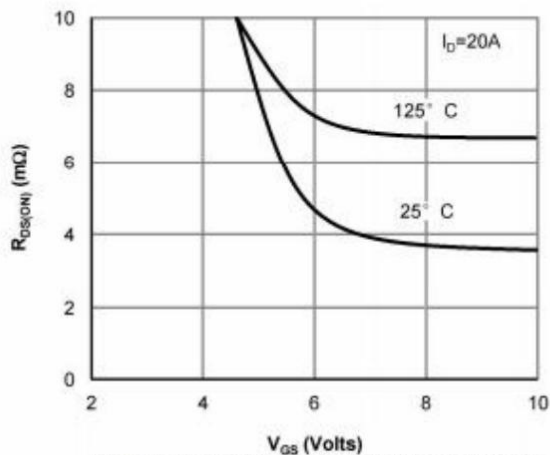


Figure 5: On-Resistance vs. Gate-Source Voltage

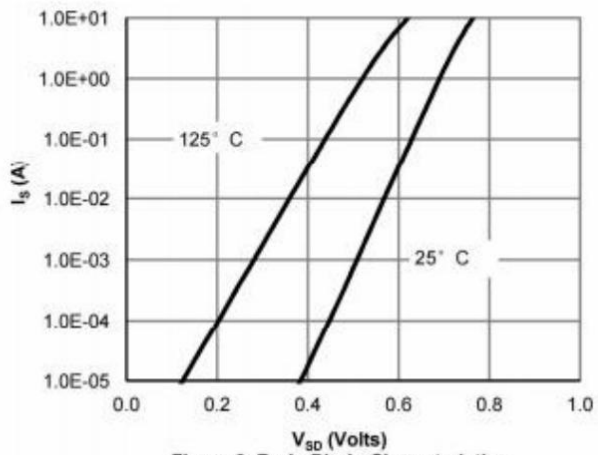


Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve

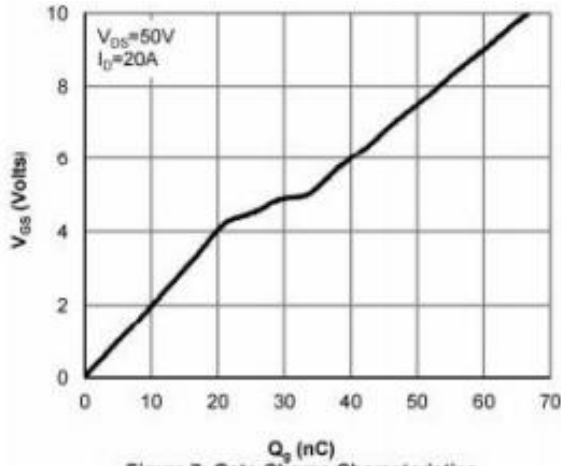


Figure 7: Gate-Charge Characteristics

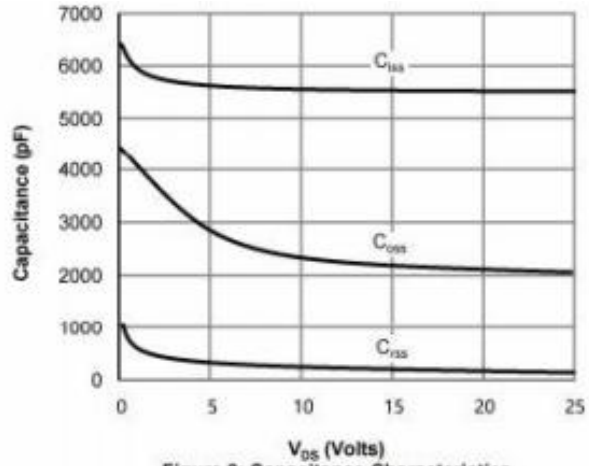


Figure 8: Capacitance Characteristics

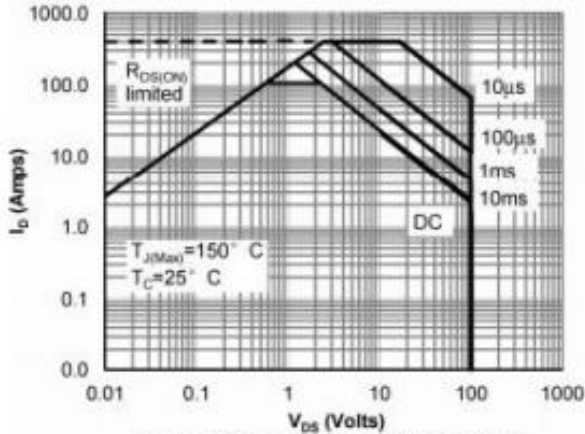


Figure 9: Maximum Forward Biased Safe Operating Area

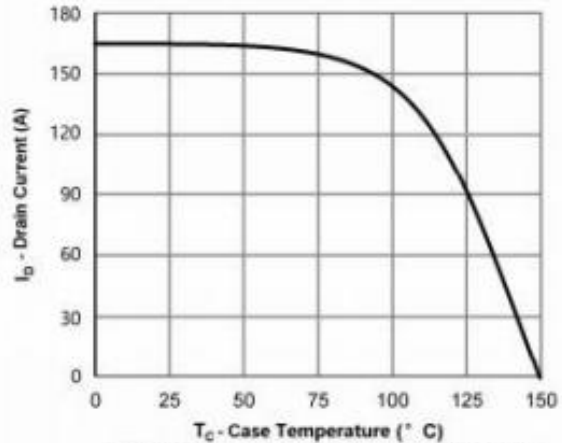


Figure 10: Maximum Continuous Drain Current vs Case Temperature

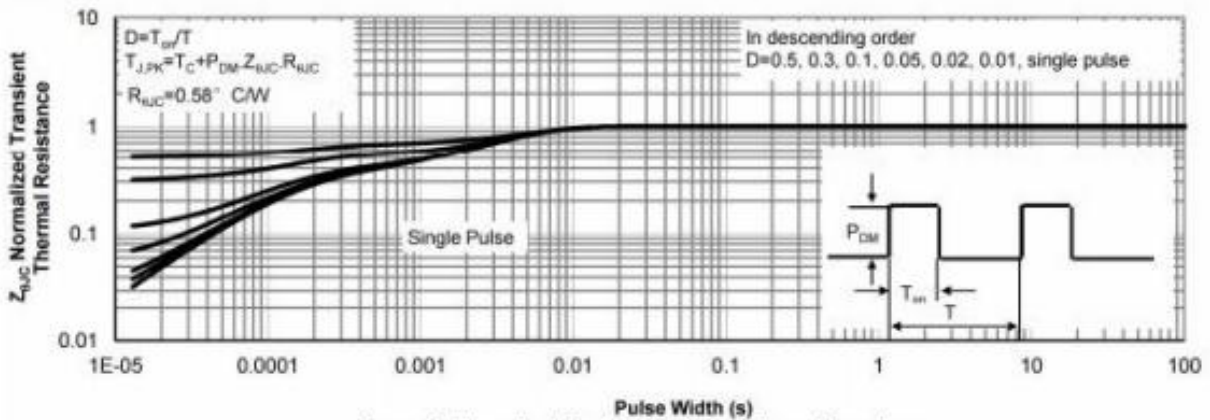
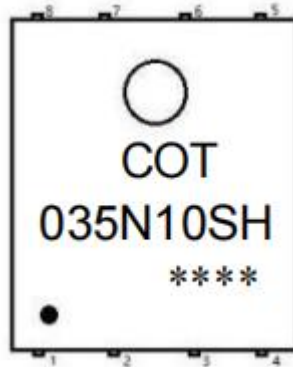


Figure 11: Normalized Maximum Transient Thermal Impedance

**Marking Instructions**



Note:

COT: Company Code.

035N10SH: Product Type.

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

**Packaging SPEC**

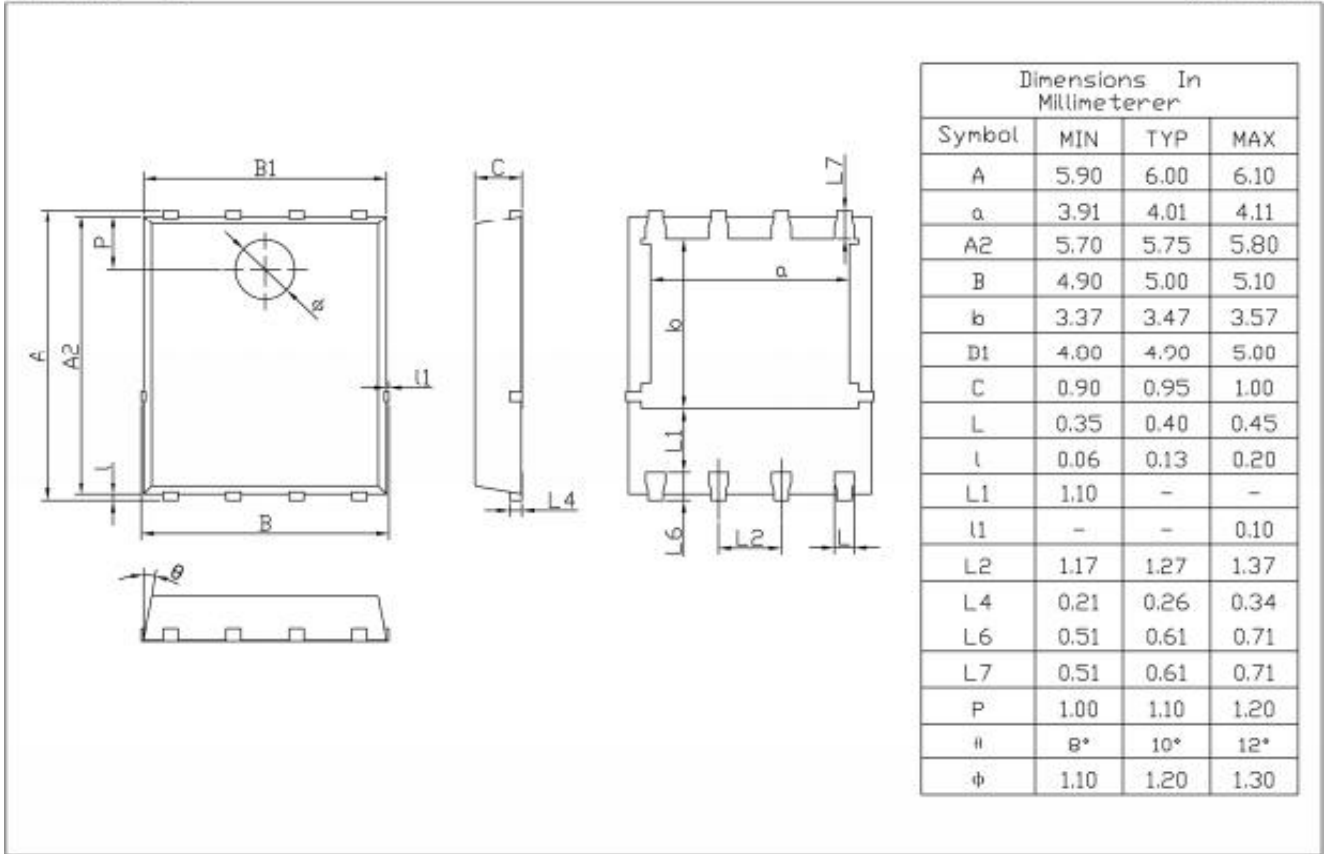
REEL

Package Type	Units					Dimension (unit: mm <sup>3</sup> )		
	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 X6

Unit:mm



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