/ Descriptions

PDFN5 6 N

N-Channel MOSFET in a PDFN5 6 Plastic Package .

/ Features

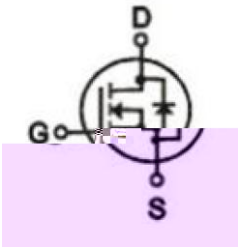
Low $R_{DS(ON)}$ to minimize conductive loss;low Gate Charge for fast switching;Low Thermal resistance;HF Product.

/ Applications

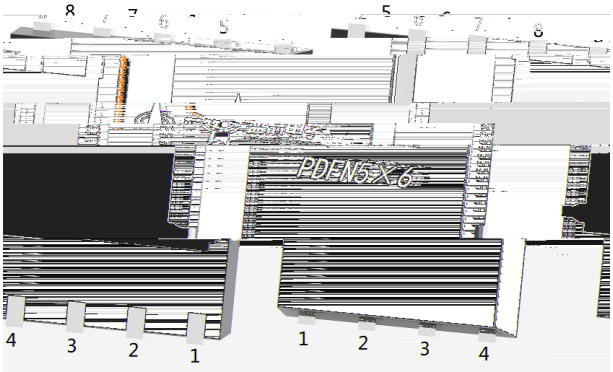
LED

For boost converters and synchronous rectifiers for consumer, telecom, industrial power supplies and LED backlighting.

/ Equivalent Circuit



/ Pinning



PIN1 2 3 S PIN4 G PIN5 6 7 8 D

/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings(T_a=25)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	80	V
Drain Current - Continuous		I_D(Tc=25)	111	A
Drain Current Pulsed		I_{DM}	250	A
Gate-Source Voltage		V_{GS}	20	V
Power Dissipation		P_D(T_c=25)	83	W
Single Pulse Avalanche Energy(L=0.5mH)		E_{AS}	580	mJ
Avalanche Current(L=0.5mH)		I_{AS}	48.5	A
Junction and Storage Temperature Range		T_j, T_{stg}	-55 to 150	
Thermal resistance, junction - ambient	t 10s	R JA	17	℃/ W
	Steady-State		55	
Thermal resistance, junction - case	Steady-State	R JC	1.5	

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=250uA, V_{GS}=0V	80	92		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=80V, V_{GS}=0V			1.0	uA
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=250uA	2	3.2	4	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=20A		2.3	3.5	m
	$R_{DS(ON)}$	V_{GS}=6V, I_D=10A		3.2	5.5	m
Input Capacitance	C_{iss}	V_{DS}=25V V_{GS}=0V f=1.0MHz		4480		pF
Output Capacitance	C_{oss}			1780		
Reverse Transfer Capacitance	C_{rss}			80		
Gate resistance	R_g	V_{GS}=0V V_{DS}=0V f=1MHz		2.6		
Total Gate Charge	$Q_{g(10V)}$	V_{GS}=10V, V_{DS}=40V I_D=20A		58		nC
Gate Source Charge	Q_{gs}			15		
Gate Drain Charge	Q_{gd}			14		

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{D(on)}$	V_{GS}=10V, V_{DS}=40V, R_L=2 (N_{GEN}9/		13		ns
Turn-On Rise Time	t_r			6		
Turn-Off Delay Time	$t_{D(off)}$			32		
Turn-Off Fall Time	t_f			9		

/ Electrical Characteristic Curve

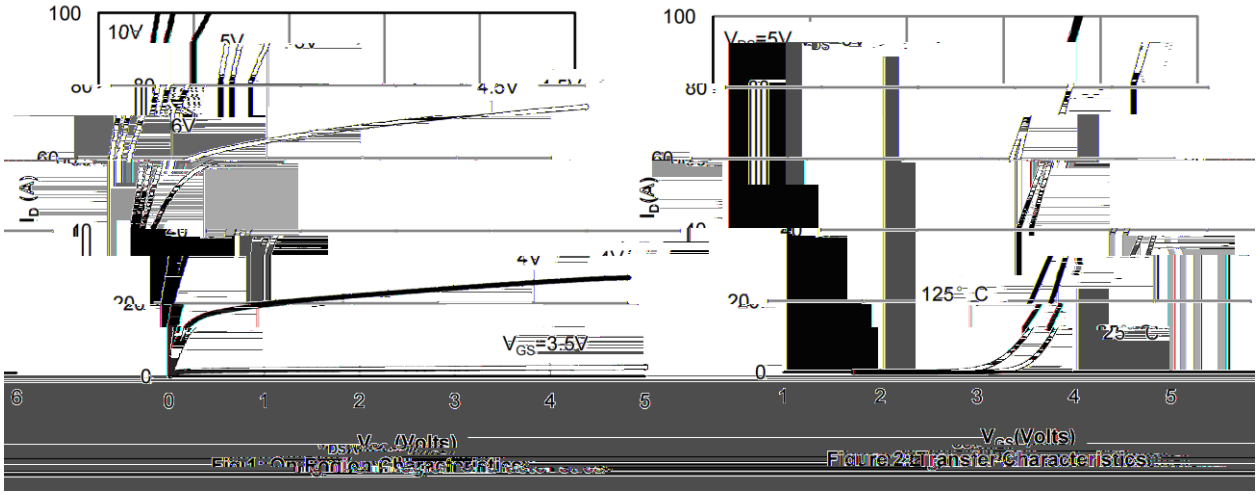
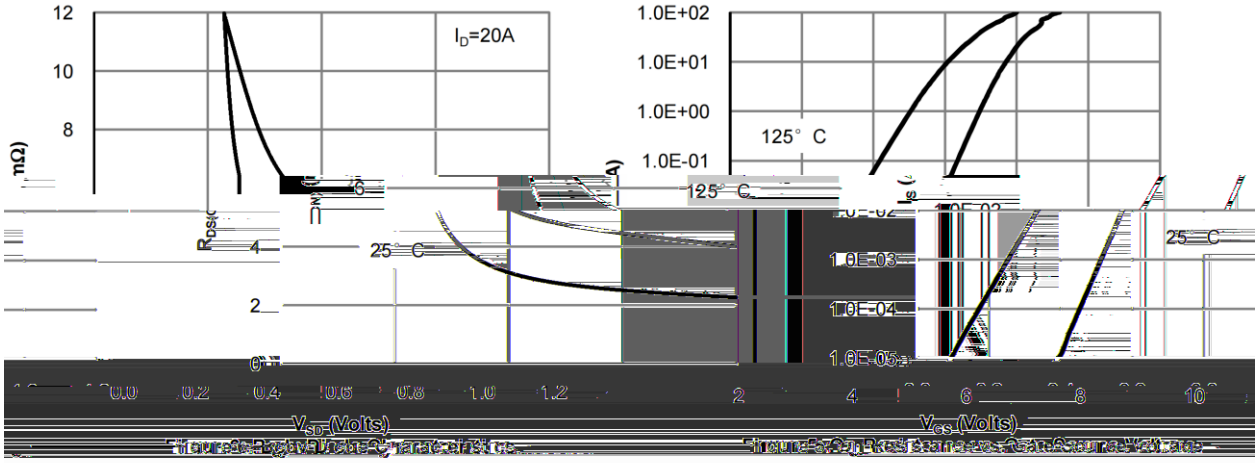


Figure 1: On-Region Characteristics

Figure 2: Transfer Characteristics



/ Electrical Characteristic Curve

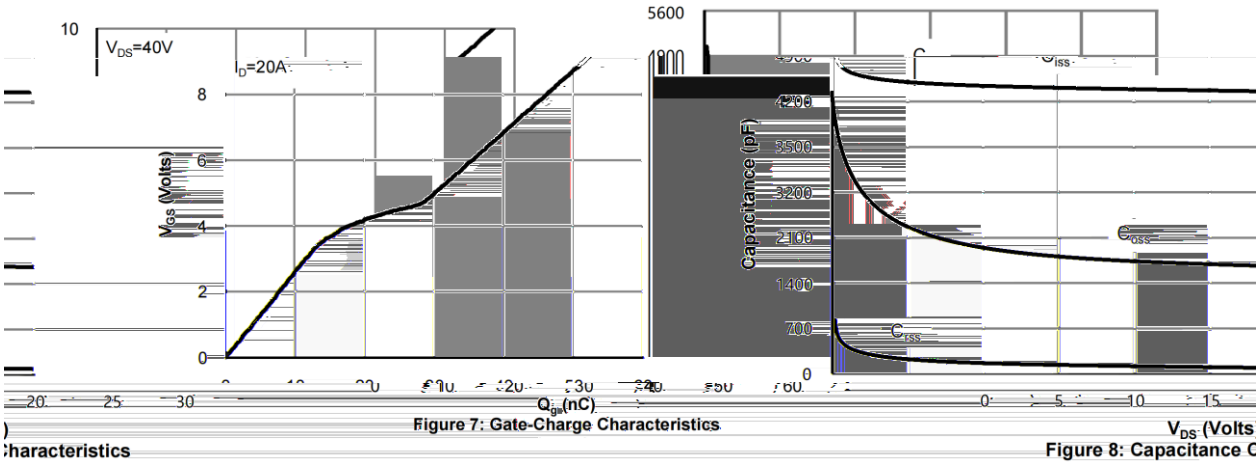


Figure 7: Gate-Charge Characteristics

haracteristics

Figure 8: Capacitance C

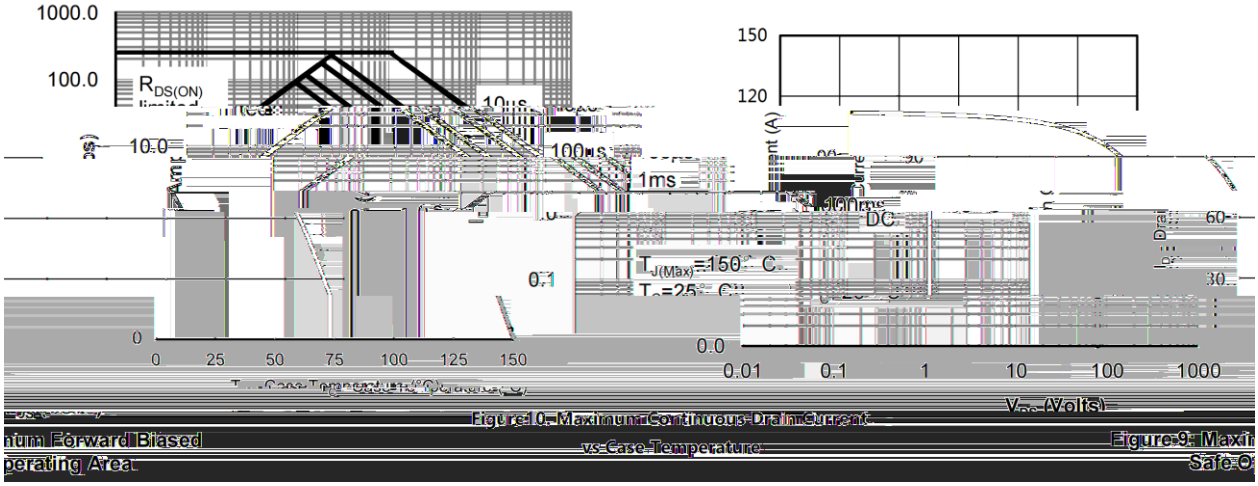
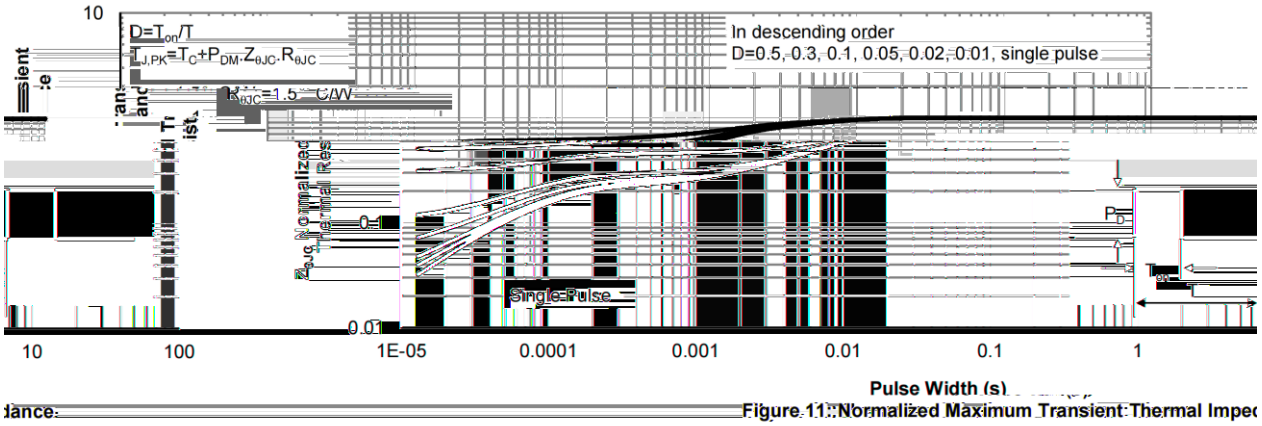


Figure 10: Maximum Continuous Drain Current vs Case Temperature

num Forward Biased perating Area

Figure 9: Maxi Safe O

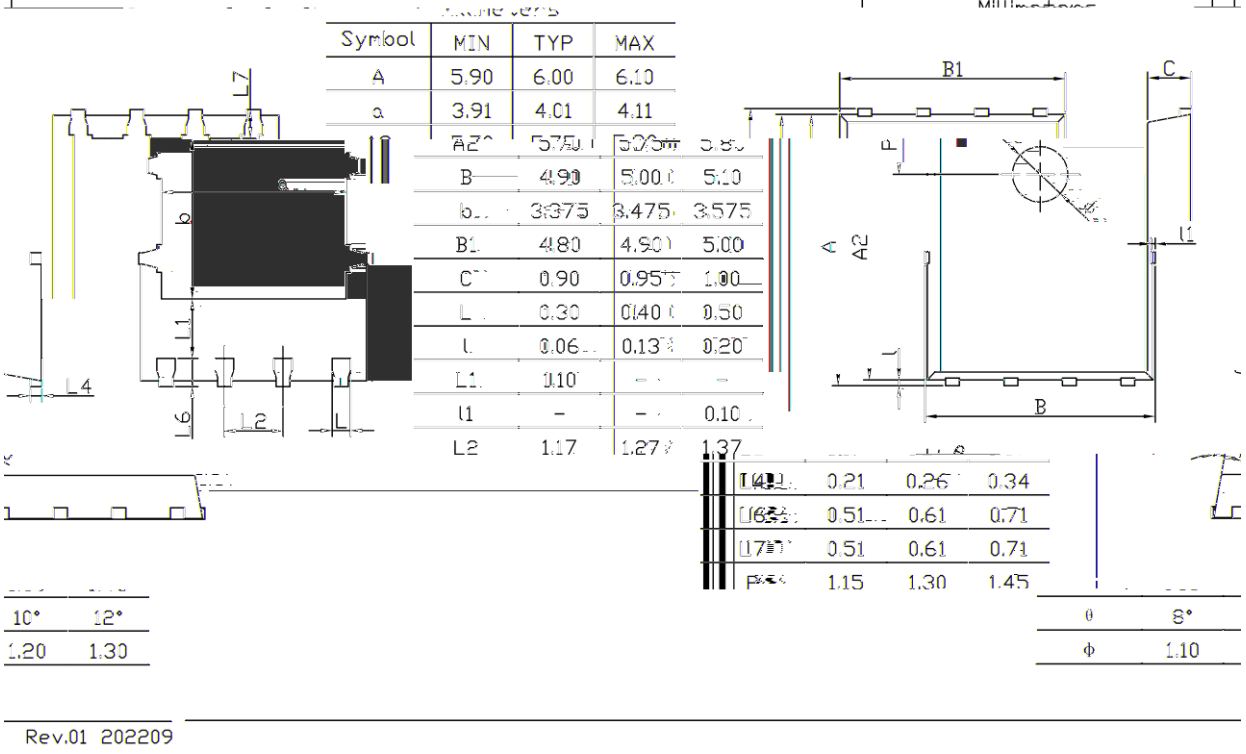


dance:

Figure 11: Normalized Maximum Transient Thermal Impec

/ Package Dimensions

PDFN5X6 Unit:mm



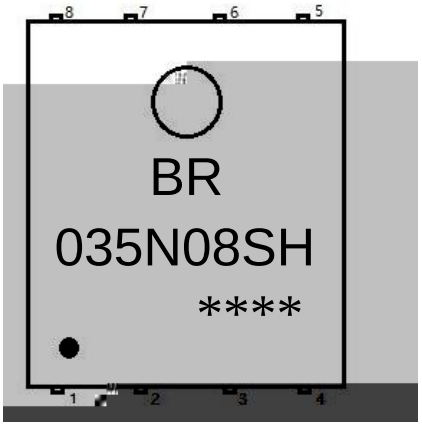
Symbol	MIN	TYP	MAX
A	5.90	6.00	6.10
a	3.91	4.01	4.11
A2	5.75	5.90	5.95
B	4.90	5.00	5.10
b	3.375	3.475	3.575
B1	4.80	4.90	5.00
C	0.90	0.95	1.00
L	0.30	0.40	0.50
L1	0.06	0.13	0.20
L1	0.10	–	–
l1	–	–	0.10
L2	1.17	1.27	1.37
	0.21	0.26	0.34
	0.51	0.61	0.71
	0.51	0.61	0.71
	1.15	1.30	1.45

10°	12°
1.20	1.30

θ	8°
Φ	1.10

Rev.01 202209

/ Marking Instructions

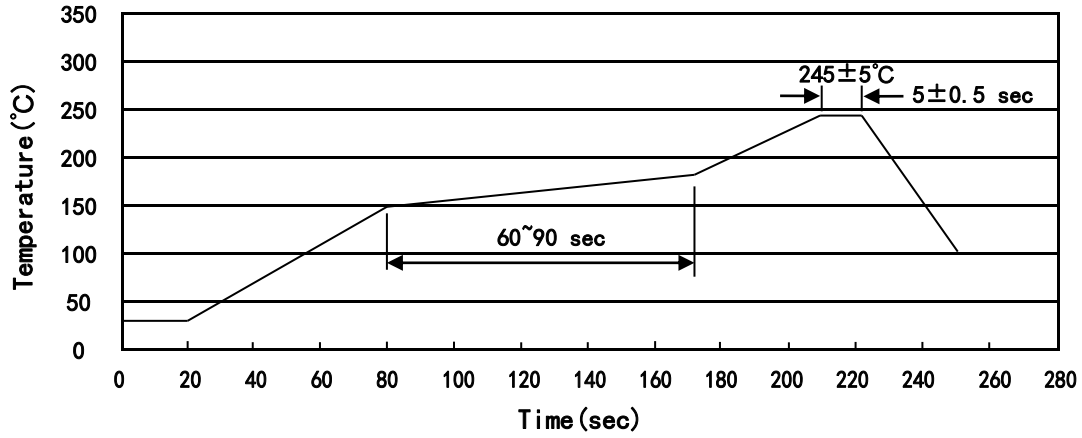


035N08SH

Note

BR	Company Code
035N08SH	Product Type
****:	Lot No. Code, code change with Lot No

( ) / Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

1 150 180 60 90sec;	1.Preheating:150~180 , Time:60~90sec.
2 245 5 5 0.5sec;	2.Peak Temp.:245 5 , Duration:5 0.5sec.
3 2 10 /sec.	3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

260 5 10 1 sec. Temp.:260±5 Time:10±1 sec

/ Packaging SPEC.

/ REEL

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

/ Notices