/ Descriptions

TO-263 N

N-CHANNEL MOSFET in a TO-263 Plastic Package.

/ Features

V_{DS}=60V I_D=225A

$R_{DS(on)}$@10V 2.2m (Type. 1.9m)

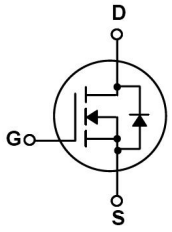
HF Product.

/ Applications

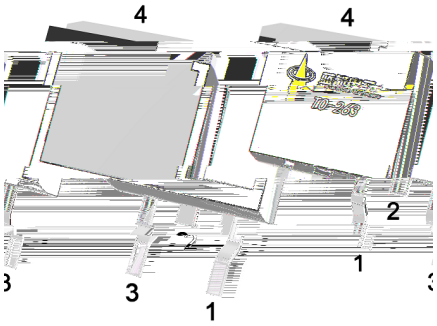
BLDC

High Efficiency Synchronous Rectification in SMPS,Uninterruptible Power Supply,BLDC Motor drive applications,Battery powered circuits.

/ Equivalent Circuit



/ Pinning



PIN1 G PIN 2 4 D PIN 3 S

/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	60	V
Drain Current		I_D(Tc=25)	225	A
Pulsed Drain Current		I_{DM}	646	A
Gate-Source Voltage		V_{GS}	±20	V
Single Pulsed Avalanche Energy L=0.5mH		E_{AS}	380	mJ
Avalanche Current		I_{AS}	30.8	A
Total Power Dissipation		P_D(Tc=25)	125	W
Junction and Storage Temperature Range		T_J,T_{STG}	-55 to 150	
Thermal Resistance-Junction to Ambient	Steady-State	R ©JA	50	/W
Thermal Resistance-Junction to Case	Steady-State	R ©JC	0.63	

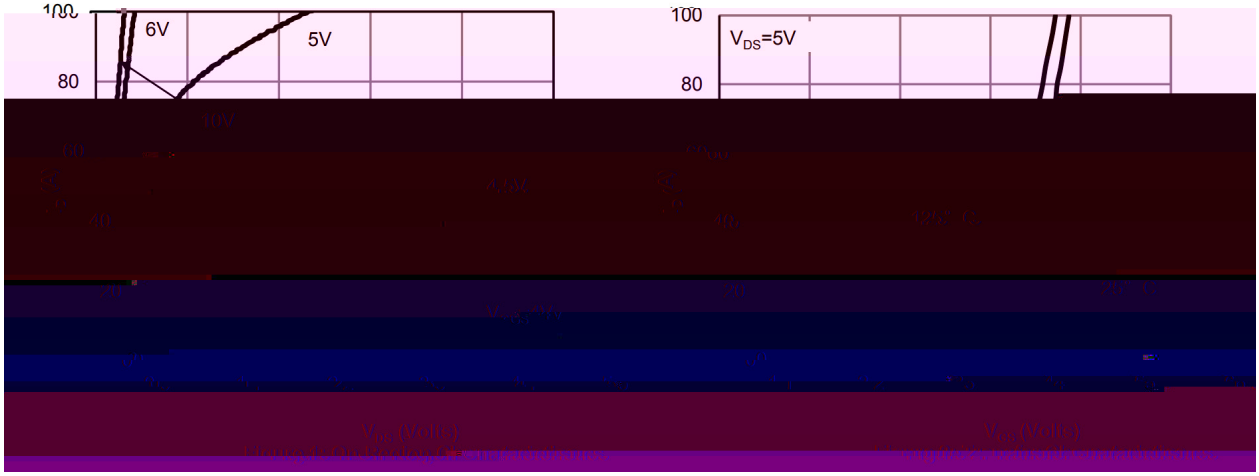
/ Electrical Characteristics(Ta=25)

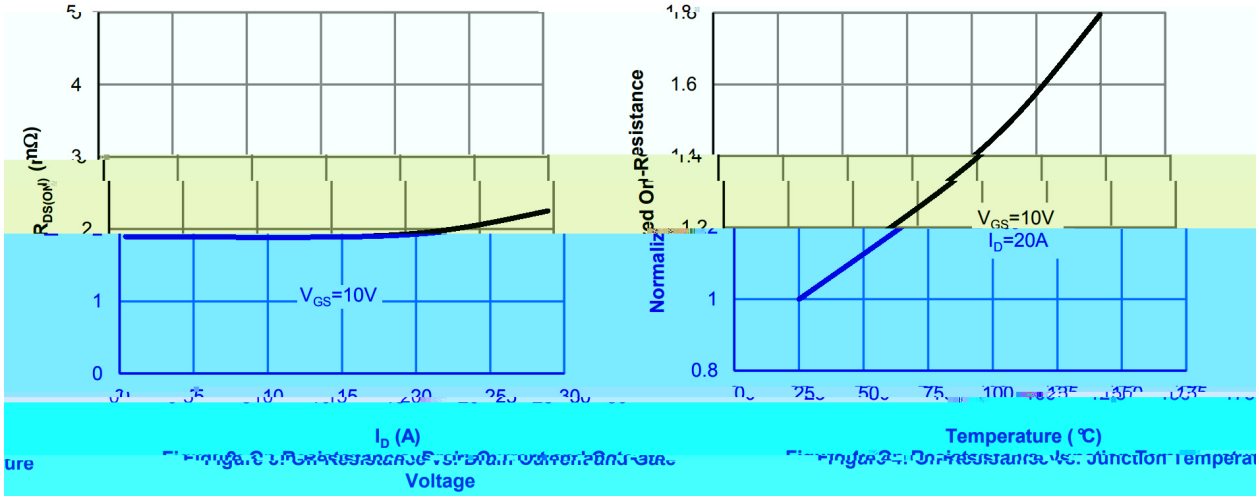
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250 A	60	65		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V V_{GS}=0V			1	A
Gate-Body Leakage Current Forward	I_{GSS}	V_{GS}=±20V V_{DS}=0V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250 A	2	3	4	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V I_D=20A		1.9	2.2	m
Forward On Voltage	V_{SD}	V_{GS}=0V I_S=1A			1.2	V
Gate resistance	R_g	f=1MHz		1.0		
Input Capacitance	C_{iss}	V_{DS}=25V V_{GS}=0V f=1MHz		6700		pF
Output Capacitance	C_{oss}			1400		
Reverse Transfer Capacitance	C_{rss}			70		

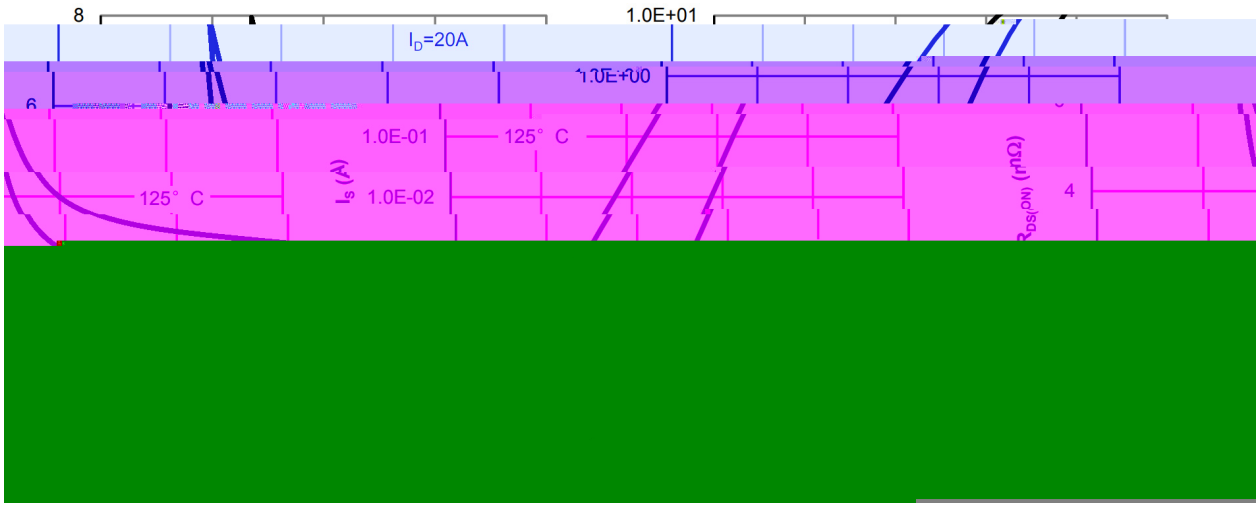
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	Q_g	V_{GS}=10V V_{DS}=30V I_D=20A		60		nC
Gate Source Charge	Q_{gs}			16		
Gate Drain Charge	Q_{gd}			3		
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=10V V_{DS}=20V R_L=1 R_{GEN}=3		13		ns
Turn-On Rise Time	t_r			4		
Turn-Off Delay Time	$t_{d(off)}$			47		
Turn-Off Fall Time	t_f			6.5		

/ Electrical Characteristic Curve







/ Electrical Characteristic Curve

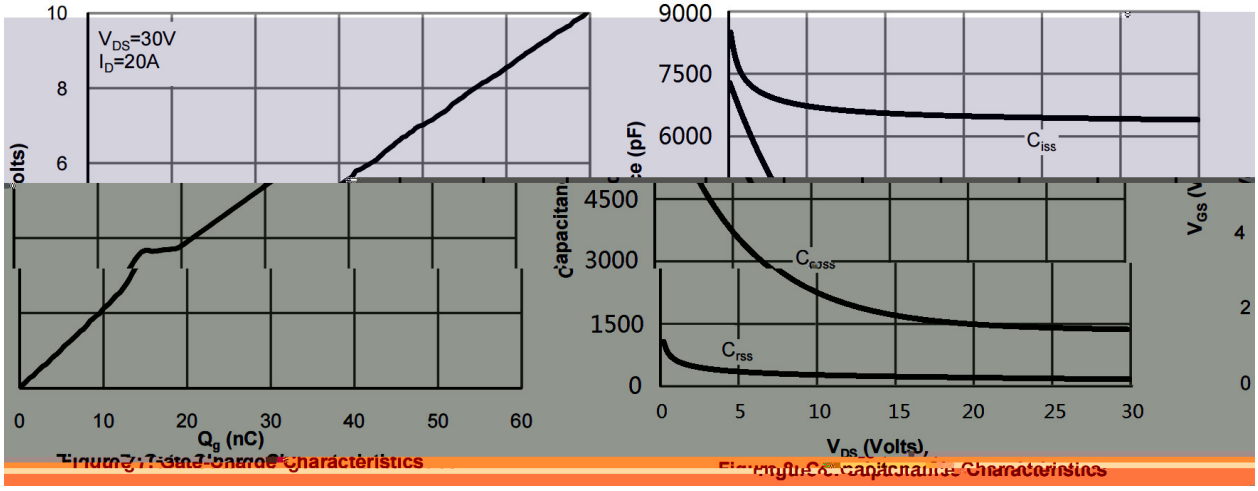
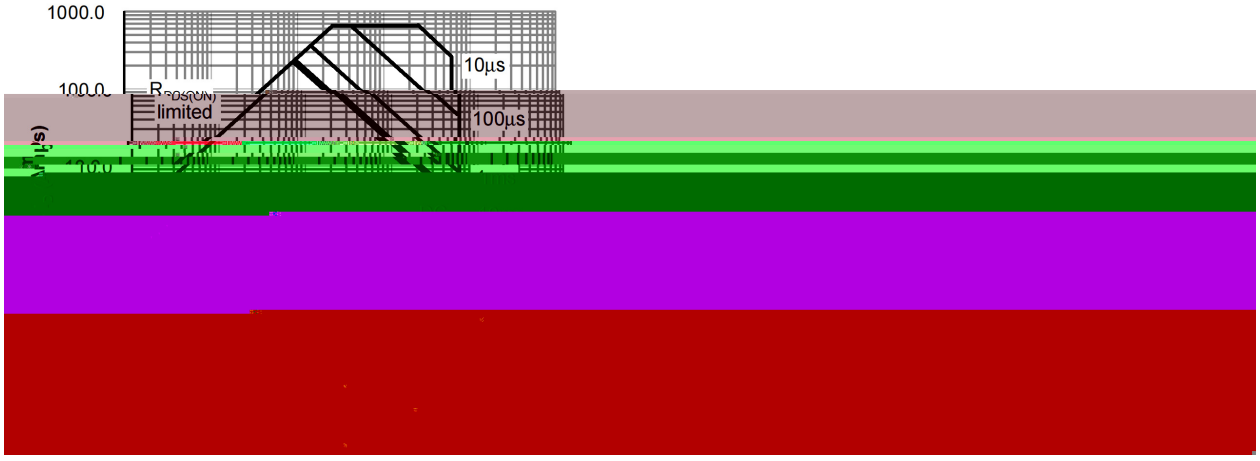


Figure 9: Gate Charge Characteristics

Figure 8: Capacitance Characteristics



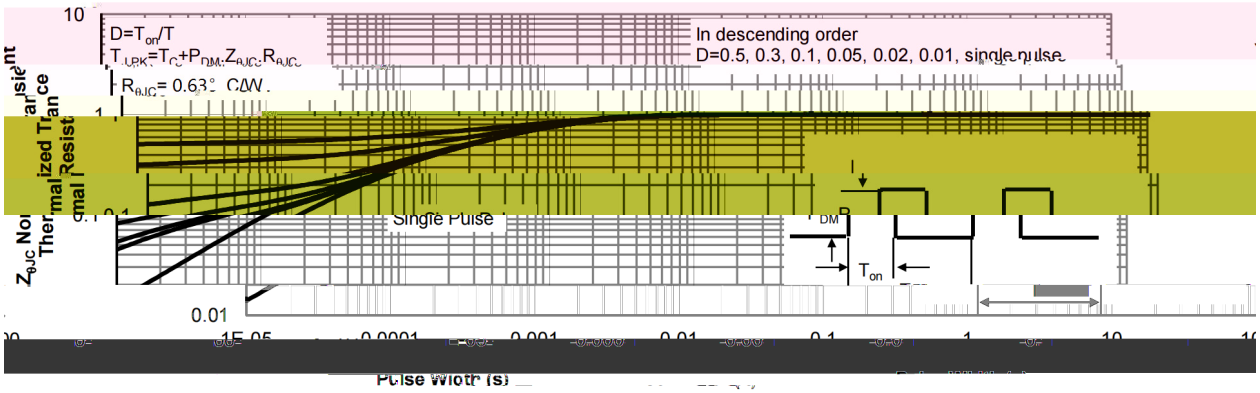
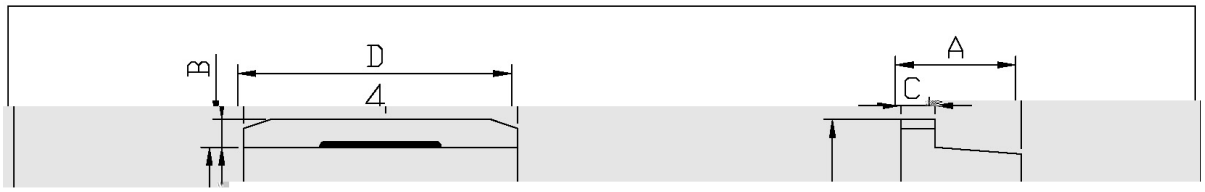


Figure 10: Normalized Maximum Transient Thermal Impedance

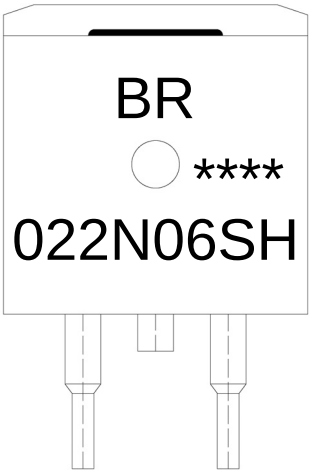
/ Package Dimensions



单位：mm

Symbol	Min	Max	Symbol	Min	Max
A	4.30	4.70	E	9.00	9.40
B	1.00	1.40	e1	2.34	2.74
b	0.70	0.90	e2	4.88	5.28
b1	1.15	1.35	L1	15.00	16.00
b2	0.40	0.60	L2	2.24	2.84
C	1.20	1.40	L3	1.20	1.60
D	9.80	10.20			

/ Marking Instructions



BR

022N06SH

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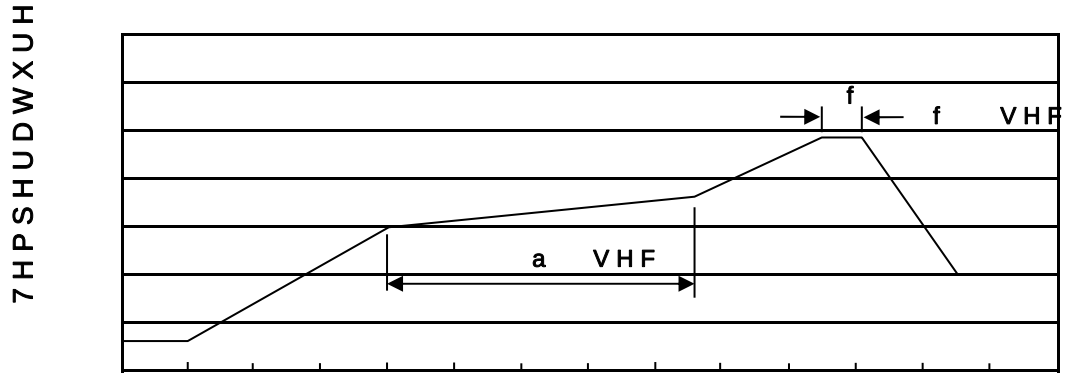
Note:

BR:	Company Code
022N06SH:	Product Type Code
****:	Lot No. Code, code change with Lot No

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



7LPH VHF

		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 7>û ˜ E	Units ;>û ¦H					Dimension ;>û p . (unit ÆEmm³)		
	Units/Reel / --	Reels/Inner Box -- /-	Units/Inner Box /-	Inner Boxes/Outer Box - /1ç	Units/Outer Box /1ç	Reel	Inner Box×	Outer Box1ç
TO-263	800	1	800	6	4,800	13 s ×24	360×360×50	380×335×366

/ TUBE

Package Type 7>û ˜ E	Units ;>û ¦H					Dimension ;>û p . (unit ÆEmm³)		
	Units/Tube / •1×	Tubes/Inner Box •1× /-	Units/Inner Box /-	Inner Boxes/Outer Box - /1ç	Units/Outer Box /1ç	Tube•1×	Inner Box×	Outer Box1ç
TO-263	50	20	1,000	5	5,000	532×33×7.0	555×164×50	575×290×180

/ Notices