

/ Descriptions

TO-263 N

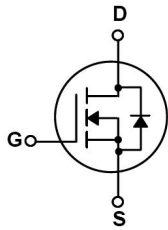
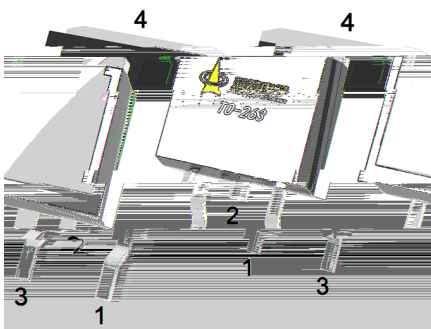
N-CHANNEL MOSFET in a TO-263 Plastic Package.

/ Features $V_{DS}=60V$ $I_D=225A$ $R_{DS(on)}@10V \leq 2.2m\Omega$ (Type. 1.9m Ω) $R_{DS(on)}@4.5V \leq 3.5m\Omega$ (Type. 2.5m Ω)

HF Product.

/ Applications

These devices are well suited for high efficient switched mode power supplies Active power factor correction, electronic lamp ballast based on half bridge topology.

/ Equivalent Circuit**/ Pinning**

PIN1 G PIN 2 4 D PIN 3 S

/ Marking

See Marking Instructions.

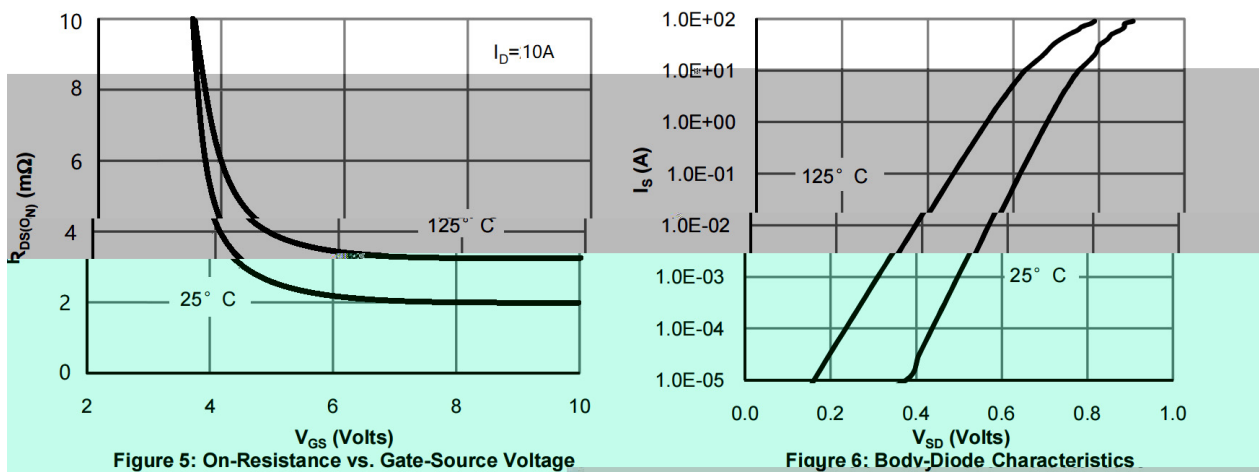
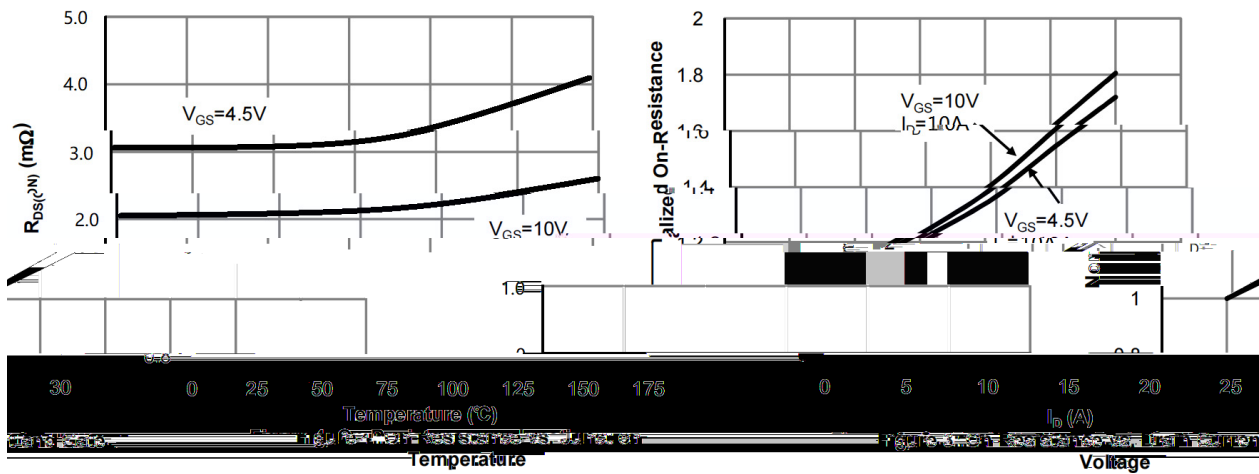
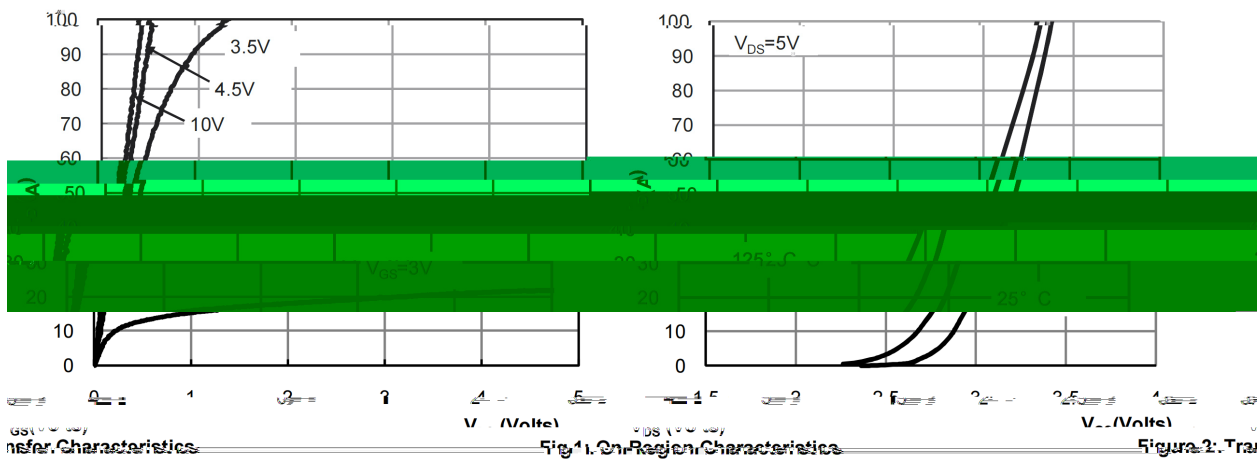
Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	60	V
Drain Current		$I_D(T_C=25^\circ\text{C})$	225	A
Pulsed Drain Current		I_{DM}	646	A
Gate-Source Voltage		V_{GS}	± 20	V
Single Pulsed Avalanche Energy $L=0.5\text{mH}$		E_{AS}	380	mJ
Avalanche Current		I_{AS}	30.8	A
Total Power Dissipation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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0\text{V}$ $I_D=250\mu\text{A}$	60	65		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60\text{V}$ $V_{GS}=0\text{V}$			1	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20\text{V}$ $V_{DS}=0\text{V}$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu\text{A}$	1	1.6	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10\text{V}$ $I_D=10\text{A}$		1.9	2.2	m Ω
		$V_{GS}=4.5\text{V}$ $I_D=10\text{A}$		2.5	3.5	
Forward On Voltage	V_{SD}	$V_{GS}=0\text{V}$ $I_S=1\text{A}$			1.2	V

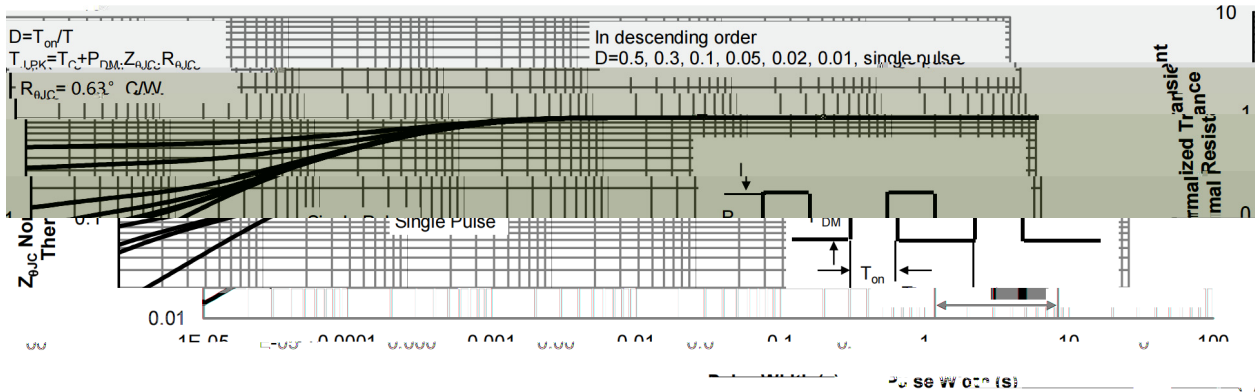
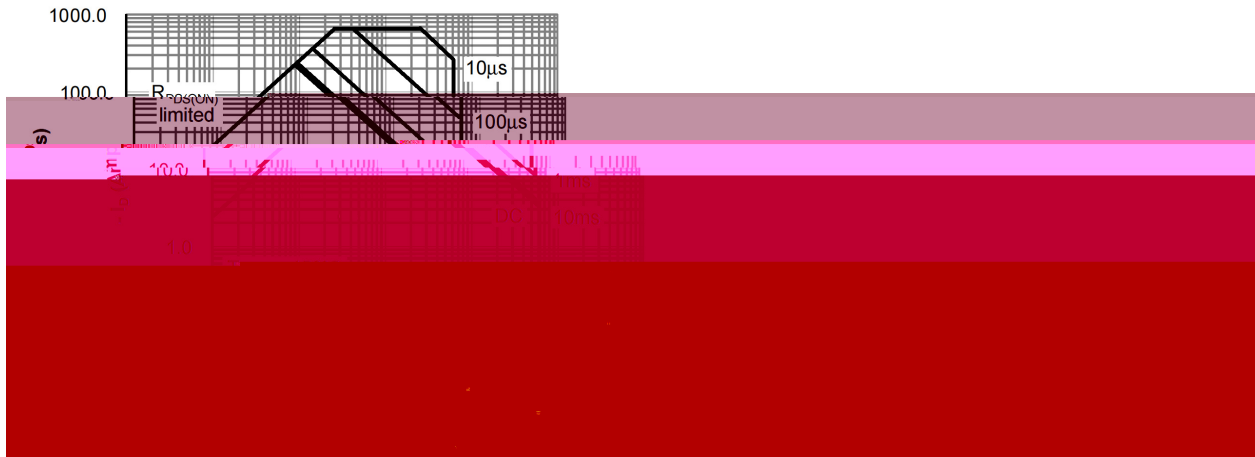
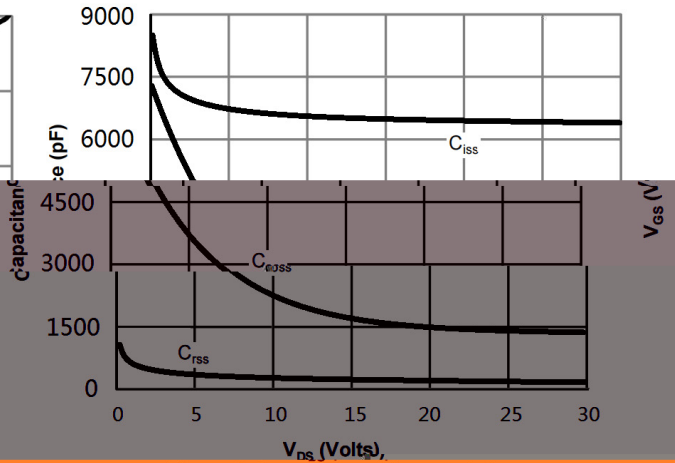
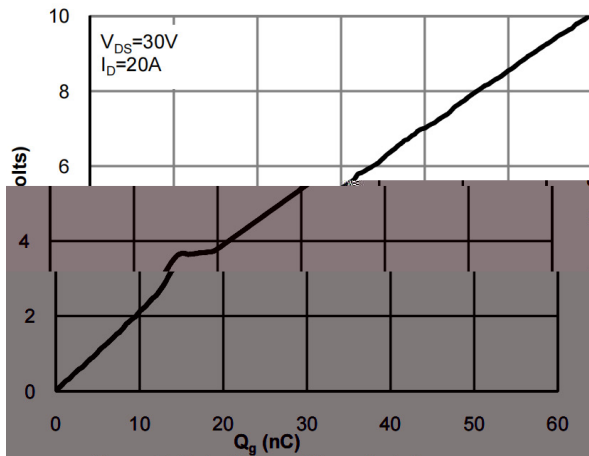
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	$Q_g(10V)$	$V_{GS}=10V$ $V_{DS}=30V$ $I_D=20A$		60		nC
Total Gate Charge	$Q_g(4.5V)$			23		
Gate Source Charge	Q_{gs}			16		
Gate Drain Charge	Q_{gd}			3		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=20V$ $R_L=1\Omega$ $R_{GEN}=3\Omega$		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



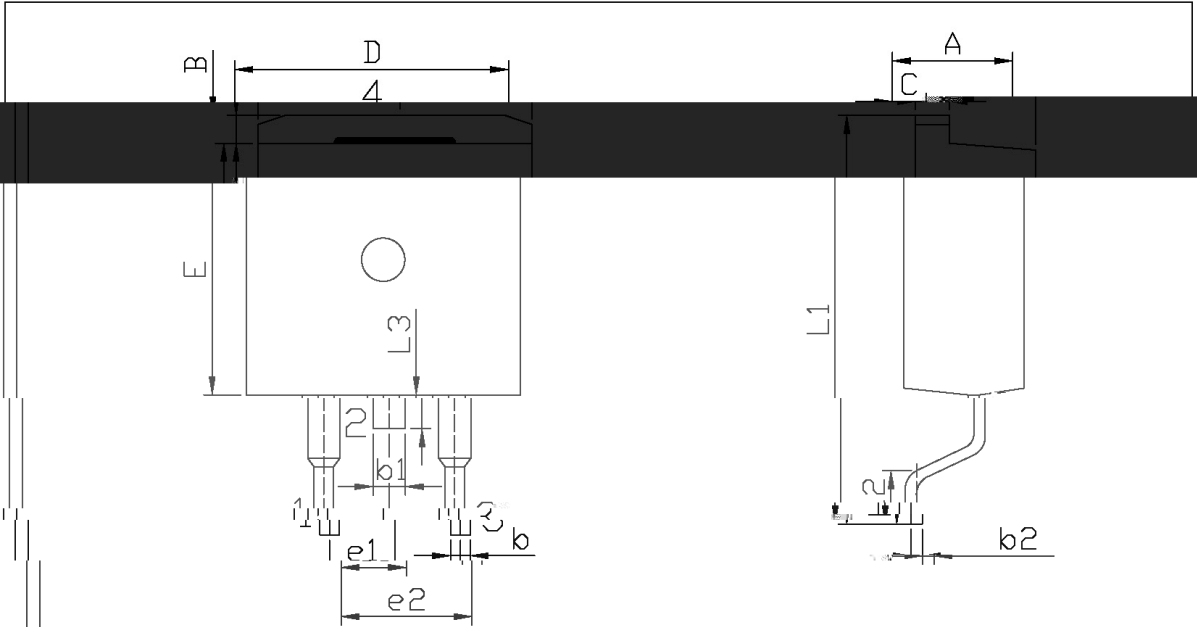
/ Electrical Characteristic Curve



ent Thermal Impedance

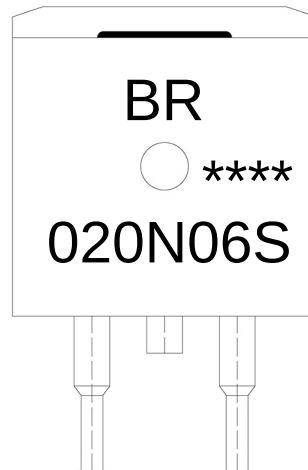
Figure 10: Normalized Maximum Transi

/ Package Dimensions



单位: mm						
Dimensions In Millimeters			Dimensions In Millimeters			
Symbol	Min	Max	Symbol	Min	Max	
A	4.30	4.70	E	9.00	9.40	
B	1.00	1.40	L1	2.24	2.74	
C	0.25	0.50	L3	0.50	0.75	
D	10.16	10.66	b1	0.50	0.75	
E	9.00	9.40	b2	0.50	0.75	
F	0.25	0.50	e1	0.50	0.75	
G	0.25	0.50	e2	0.50	0.75	
H	0.25	0.50				
I	0.25	0.50				
J	0.25	0.50				
K	0.25	0.50				
L	0.25	0.50				
M	0.25	0.50				
N	0.25	0.50				
O	0.25	0.50				
P	0.25	0.50				
Q	0.25	0.50				
R	0.25	0.50				
S	0.25	0.50				
T	0.25	0.50				
U	0.25	0.50				
V	0.25	0.50				
W	0.25	0.50				
X	0.25	0.50				
Y	0.25	0.50				
Z	0.25	0.50				
AA	0.25	0.50				
AB	0.25	0.50				
AC	0.25	0.50				
AD	0.25	0.50				
AE	0.25	0.50				
AF	0.25	0.50				
AG	0.25	0.50				
AH	0.25	0.50				
AI	0.25	0.50				
AJ	0.25	0.50				
AK	0.25	0.50				
AL	0.25	0.50				
AM	0.25	0.50				
AN	0.25	0.50				
AO	0.25	0.50				
AP	0.25	0.50				
AQ	0.25	0.50				
AR	0.25	0.50				
AS	0.25	0.50				
AT	0.25	0.50				
AU	0.25	0.50				
AV	0.25	0.50				
AW	0.25	0.50				
AX	0.25	0.50				
AY	0.25	0.50				
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BB	0.25	0.50				
BC	0.25	0.50				
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BE	0.25	0.50				
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BG	0.25	0.50				
BH	0.25	0.50				
BI	0.25	0.50				
BJ	0.25	0.50				
BK	0.25	0.50				
BL	0.25	0.50				
BM	0.25	0.50				
BN	0.25	0.50				
BO	0.25	0.50				
BP	0.25	0.50				
BQ	0.25	0.50				
BR	0.25	0.50				
BS	0.25	0.50				
BT	0.25	0.50				
BU	0.25	0.50				
BV	0.25	0.50				
BW	0.25	0.50				
BX	0.25	0.50				
BY	0.25	0.50				
BZ	0.25	0.50				
CA	0.25	0.50				
CB	0.25	0.50				
CC	0.25	0.50				
CD	0.25	0.50				
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CG	0.25	0.50				
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CQ	0.25	0.50				
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CZ	0.25	0.50				
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DW	0.25	0.50				
DX	0.25	0.50				
DY	0.25	0.50				
DZ	0.25	0.50				
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EB	0.25	0.50				
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EI	0.25	0.50				
EJ	0.25	0.50				
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EO	0.25	0.50				
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ER	0.25	0.50				
ES	0.25	0.50				
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EX	0.25	0.50				
EY	0.25	0.50				
EZ	0.25	0.50				
FA	0.25	0.50				
FB	0.25	0.50				
FC	0.25	0.50				
FD	0.25	0.50				
FE	0.25	0.50				
FF	0.25	0.50				
FG	0.25	0.50				
FH	0.25	0.50				
FI	0.25	0.50				
FJ	0.25	0.50				
FK	0.25	0.50				
FL	0.25	0.50				
FM	0.25	0.50				
FN	0.25	0.50				
FO	0.25	0.50				
FP	0.25	0.50				
FQ	0.25	0.50				
FR	0.25	0.50				
FS	0.25	0.50				
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FX	0.25	0.50				
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GH	0.25	0.50				
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GN	0.25	0.50				
GO	0.25	0.50				
GP	0.25	0.50				
GQ	0.25	0.50				
GR	0.25	0.50				
GS	0.25	0.50				
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GX	0.25	0.50				
GY	0.25	0.50				
GZ	0.25	0.50				
HA	0.25	0.50				
HB	0.25	0.50				
HC	0.25	0.50				
HD	0.25	0.50				
HE	0.25	0.50				
HF	0.25	0.50				
HG	0.25	0.50				
HH	0.25	0.50				
HI	0.25	0.50				
HJ	0.25	0.50				
HK	0.25	0.50				
HL	0.25	0.50				
HM	0.25	0.50				
HN	0.25	0.50				
HO	0.25	0.50				
HP	0.25	0.50				
HQ	0.25	0.50				
HR	0.25	0.50				
HS	0.25	0.50				
HT	0.25	0.50				
HU	0.25	0.50				
HV	0.25	0.50				
HW	0.25	0.50				
HX	0.25	0.50				
HY	0.25	0.50				
HZ	0.25	0.50				
IA	0.25	0.50				
IB	0.25	0.50				
IC	0.25	0.50				
ID	0.25	0.50				
IE	0.25	0.50				
IF	0.25	0.50				
IG	0.25	0.50				
IH	0.25	0.50				
II	0.25	0.50				
IJ	0.25	0.50				
IK	0.25	0.50				
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JA	0.25	0.50				
JB	0.25	0.50				
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JD	0.25	0.50				
JE	0.25	0.50				
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/ Marking Instructions



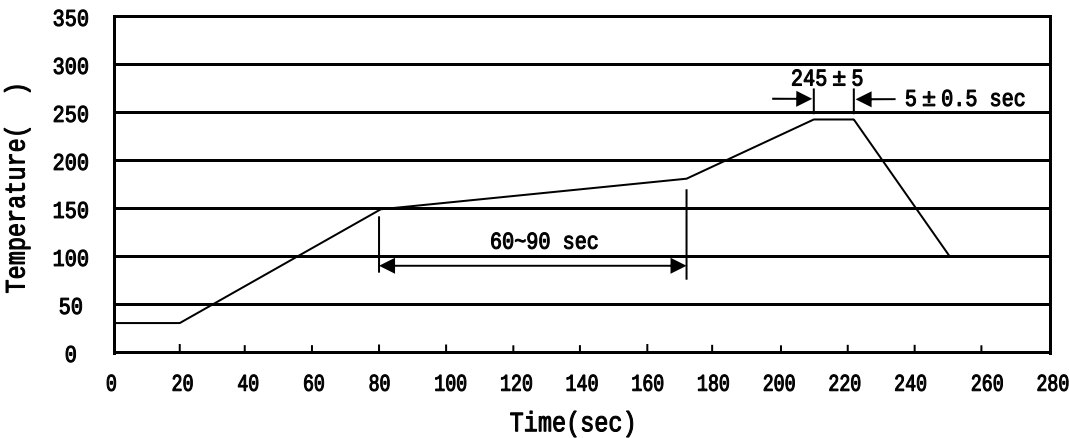
Note:

BR: Company Code

020N06S: Product Type Code

****: 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 mm ³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
TO-263	800	1	800	6	4,800	13 ×24	360×360×50	380×335×366

/ TUBE

Package Type	Units					Dimension (unit mm ³)		
	Units/Tube	Tubes/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Tube	Inner Box	Outer Box
TO-263	50	20	1,000	5	5,000	532×33×7.0	555×164×50	575×290×180

/ Notices