/ Descriptions

TO-220 ṂṂ Ŀ N ǰ MOS ʃ ɷ̃ Ẕ ˥ N-CHANNEL MOSFET in a TO-220 Plastic Package.

/ Features

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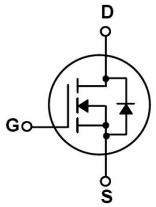
Low gate charge, low crss, fast switching.

/ Applications

ɸ̃ ̂ ̂ ɹ ˈ GF2GF ɕ ̈Ω ⊃ ˈ Ầ ʉ

These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies.

/ Equivalent Circuit



/ Pinning



PIN1 χ G PIN 2 χ D PIN 3 χ S

/ h_{FE} Classifications & Marking

ð ʍ ˥ ب ˝ See Marking Instructions.

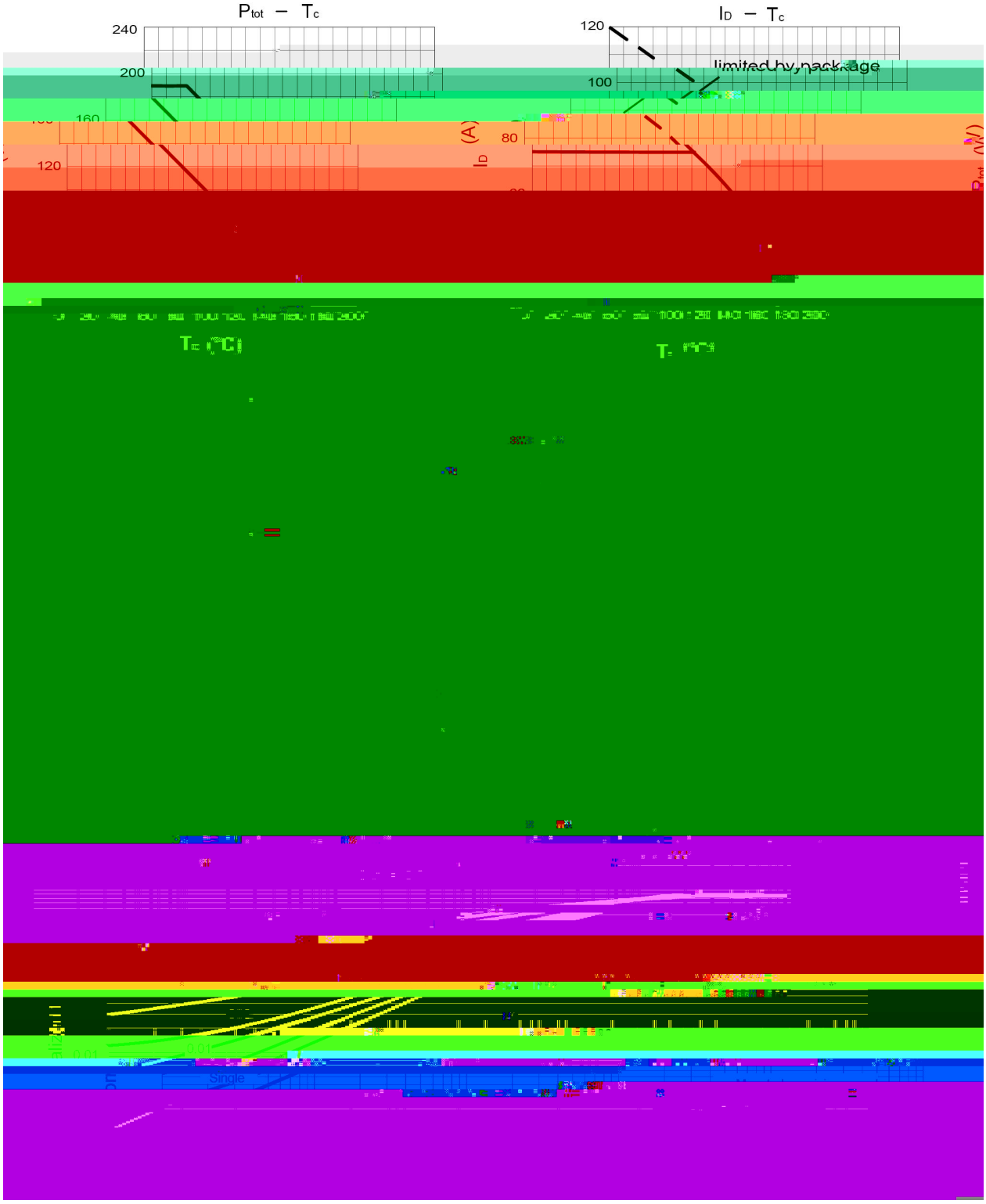
/ Absolute Maximum Ratings(Ta=25)

v ̈Ω Parameter	ϒ N Symbol	̈Ω Ö Rating	D Ꮋ Unit
Drain-Source Voltage	V_{DSS}	60	V
Drain Current	I_D(Tc=25)	100	A
Peak Drain Current	I_{DM}	380	A
Gate-Source Voltage	V_{GSS}	±20	V
Single Pulsed Avalanche Energy	E_{AS}	1.29	J
Avalanche Current	I_{AR}	58.6	A
Total Power Dissipation	P_D(Tc=25)	100	W
Junction and Storage Temperature Range	T_J,T_{STG}	-55 to 150	

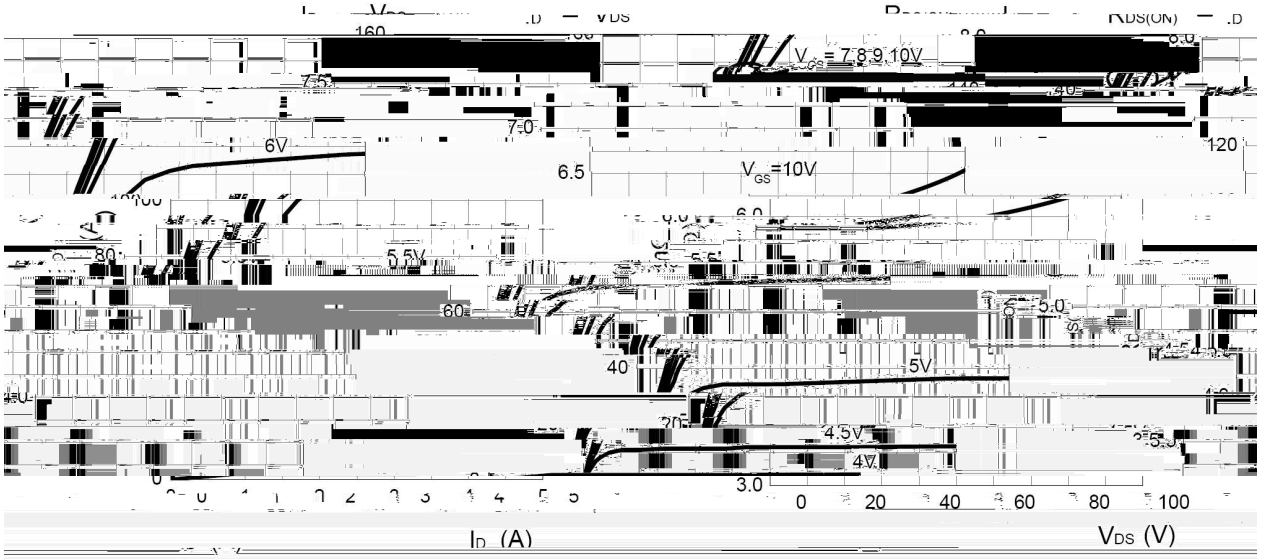
/ Electrical Characteristics(Ta=25)

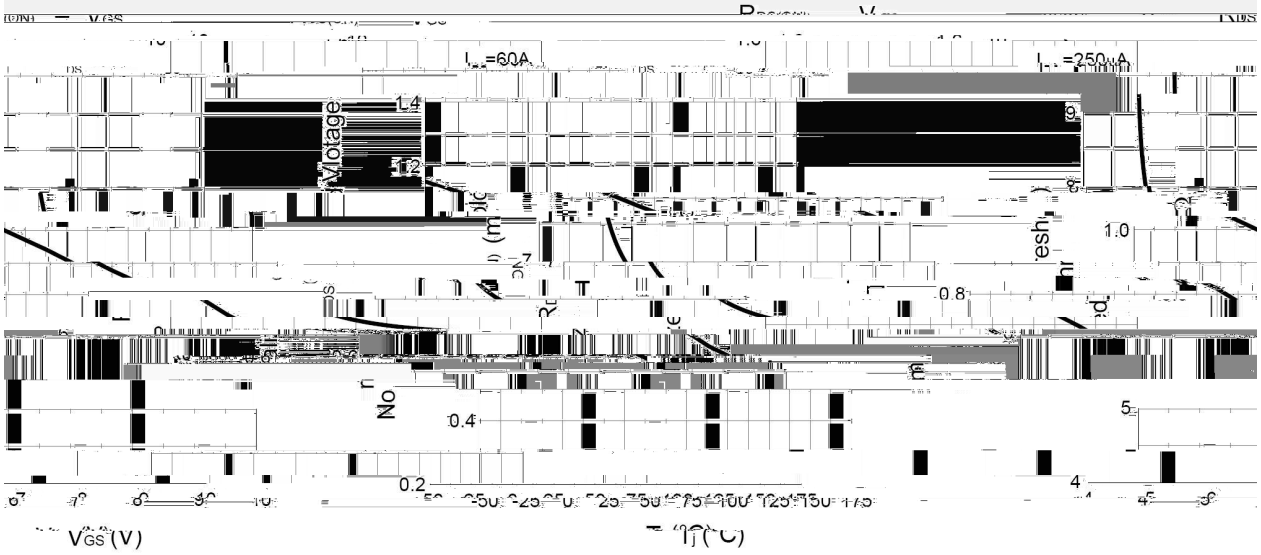
v ̈Ω Parameter	ϒ N Symbol	⅄ ⁝ ↾ Ꞇ Test Conditions	ѡ ṇ Ö Min	Ɛ ʒ Ö Typ	ѡ ᶻ Ö Max	D Ꮋ Unit
Zero Gate Voltage Drain Current	BV_{DSS}	V_{GS}=0V I_D=250μA	60			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V V_{GS}=0V			1	μA
		V_{DS}=60V V_{GS}=0V T_J=85			30	μA
Gate-Body Leakage Current Forward	I_{GSS}	V_{GS}=±20V V_{DS}=0V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250μA	2.0		4.0	V
Forward On Voltage	V_{SD}	I_S=90A V_{GS}=0V			1.2	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V I_D=90A		8.0	10	mΩ
Gate Resistance	R_G	V_{GS}=0V V_{DS}=0V Frequency=1MHz		1.7		Ω
Input Capacitance	C_{iss}	V_{GS}=0V f=1.0MHz V_{DS}=25V		3160		pF
Output Capacitance	C_{oss}			752		pF
Reverse Transfer Capacitance	C_{rss}			190		pF
Total Gate Charge	Q_G	V_{DS}=30V V_{GS}=10V I_D=60A		96		nC
Gate Source Charge	Q_{GS}			21		nC
Gate Drain Charge	Q_{GD}			23		nC
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=30V I_D=60A R_{GEN}=6Ω V_{GS}=10V		13	26	ns
Turn-On Rise Time	t_r			11	20	ns
Turn-Off Delay Time	$t_{d(off)}$			40	66	ns
Turn-Off Fall Time	t_f			60	95	ns

/ Electrical Characteristic Curve

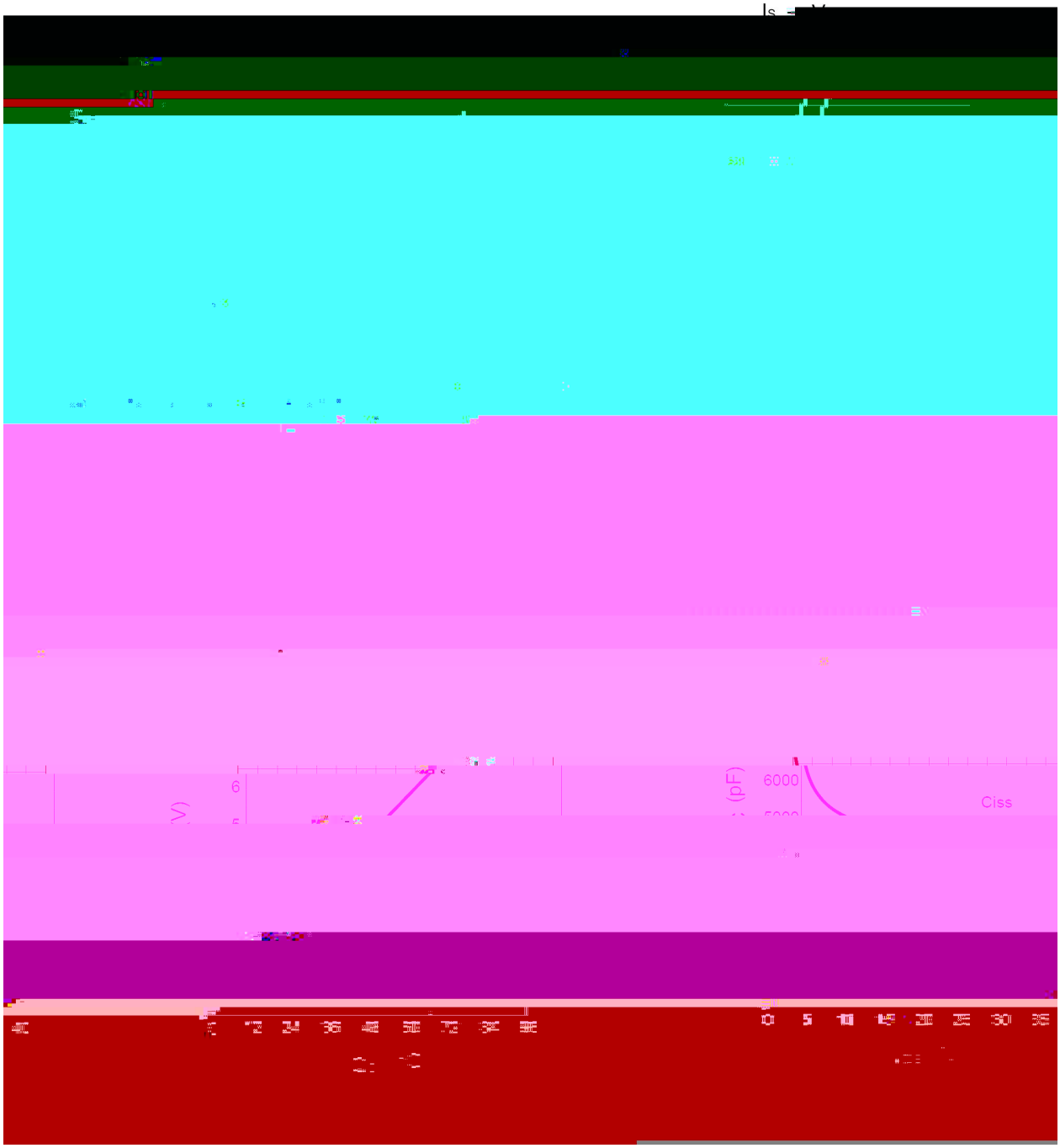


/ Electrical Characteristic Curve



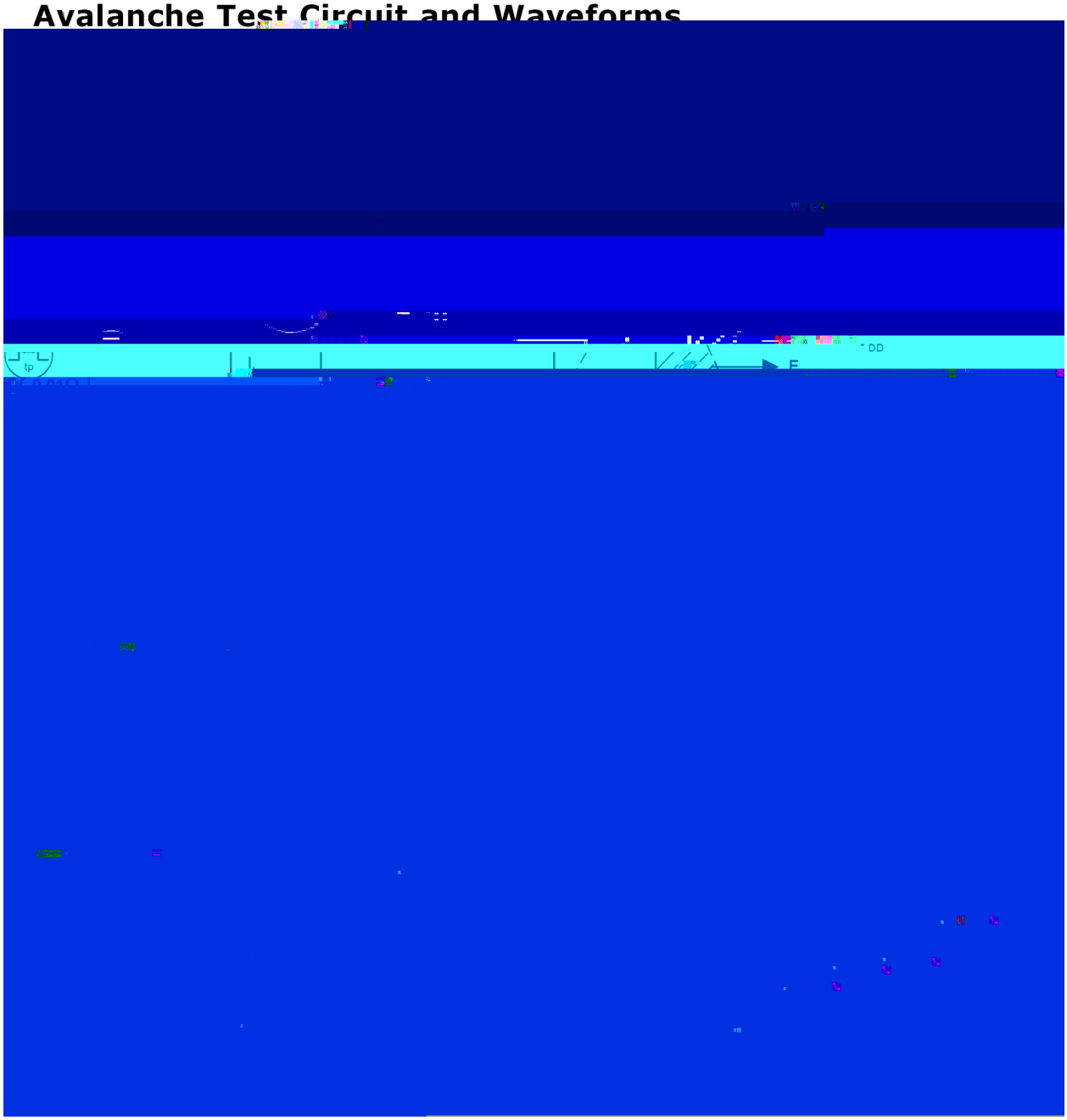


/ Electrical Characteristic Curve

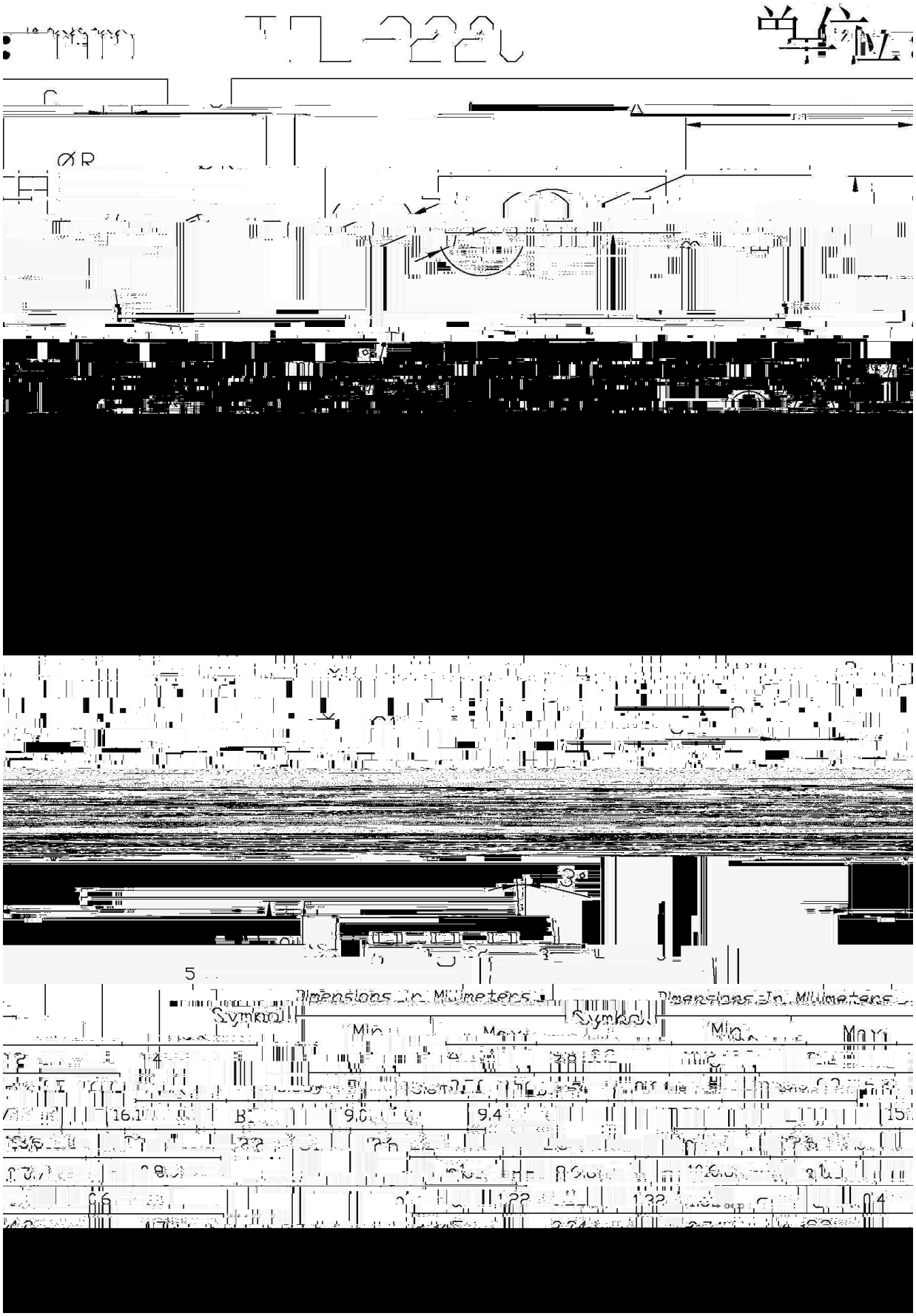


/ Test Circuit and Waveforms

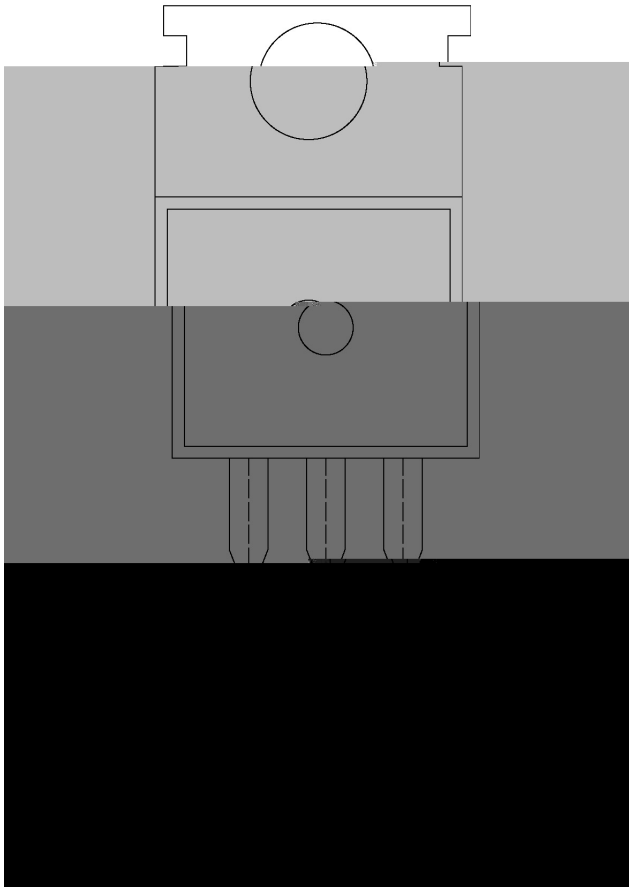
Avalanche Test Circuit and Waveforms



/ Package Dimensions



/ Marking Instructions



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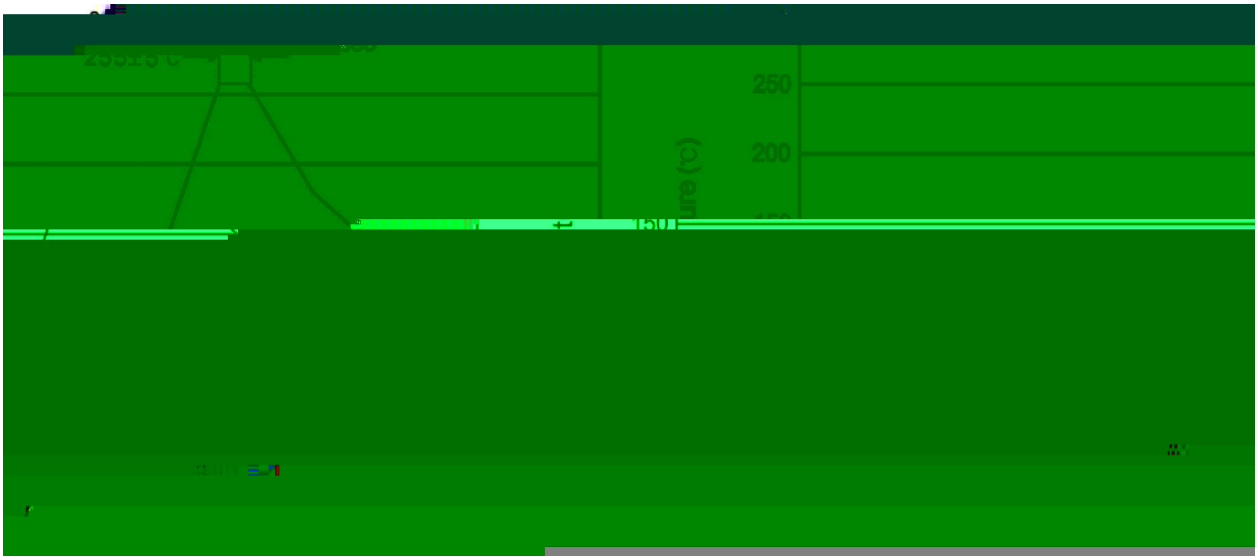
Note:

BR:	Company Code
100N06:	Product Type.

( ) / Temperature Profile for Dip Soldering(Pb-Free)



ب ˝ χ

1 ǂ ♬ □ ỷ 25 Ḱ 150 ɬ ı `H ڑ 60 Ḱ 90sec;

2 Š Ö □ ỷ 255 ° 5 ɬ ı `H ڑ ˋY ⺈ ⺮ 5 ° 0.5sec;

3 ì ˙ ⺈ ˛ ɔ ھ ỷ ⺮ 2 Ḱ 10 ɬ /sec.

Note:

1.Preheating:25~150 ɬ , Time:60~90sec.

2.Peak Temp.:255 ° 5 ɬ , Duration:5 ° 0.5sec.

3. Cooling Speed: 2~10 ɬ /sec.

/ Resistance to Soldering Heat Test Conditions

□ ỷ χ 270 ° 5 ɬ `H ڑ χ 10 ° 1 sec. Temp.:270±5 Time:10±1 sec

/ Packaging SPEC.

ˋΩ̣ τ̣ γ ⊢ / BULK

Package Type	Units					Dimension (unit mm^3)		
	Units/Bag /	Bags/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Bag	Inner Box	Outer Box
TO-220/F	200	10	2,000	5	10,000	135×190	237×172×102	560×245×195

˘ ˥ γ ⊢ / 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-220/F	50	20	1,000	5	5,000	532×31.4×5.5	555×164×50	