

/ Descriptions

TO-252 N MOS N-CHANNEL MOSFET in a TO-252 Plastic Package.

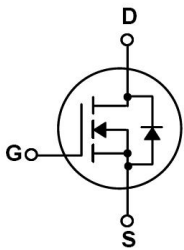
/ Features

100%
Low gate charge, low $R_{ds(on)}$, fast switching, Low Reverse transfer capacitances, 100% Single Pulse avalanche energy Test.

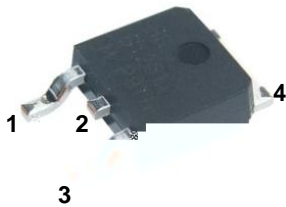
/ Applications

Power switch circuit of Video doorphone.

/ Equivalent Circuit



/ Pinning



PIN1 G PIN 2 D PIN 3 S PIN 4 D

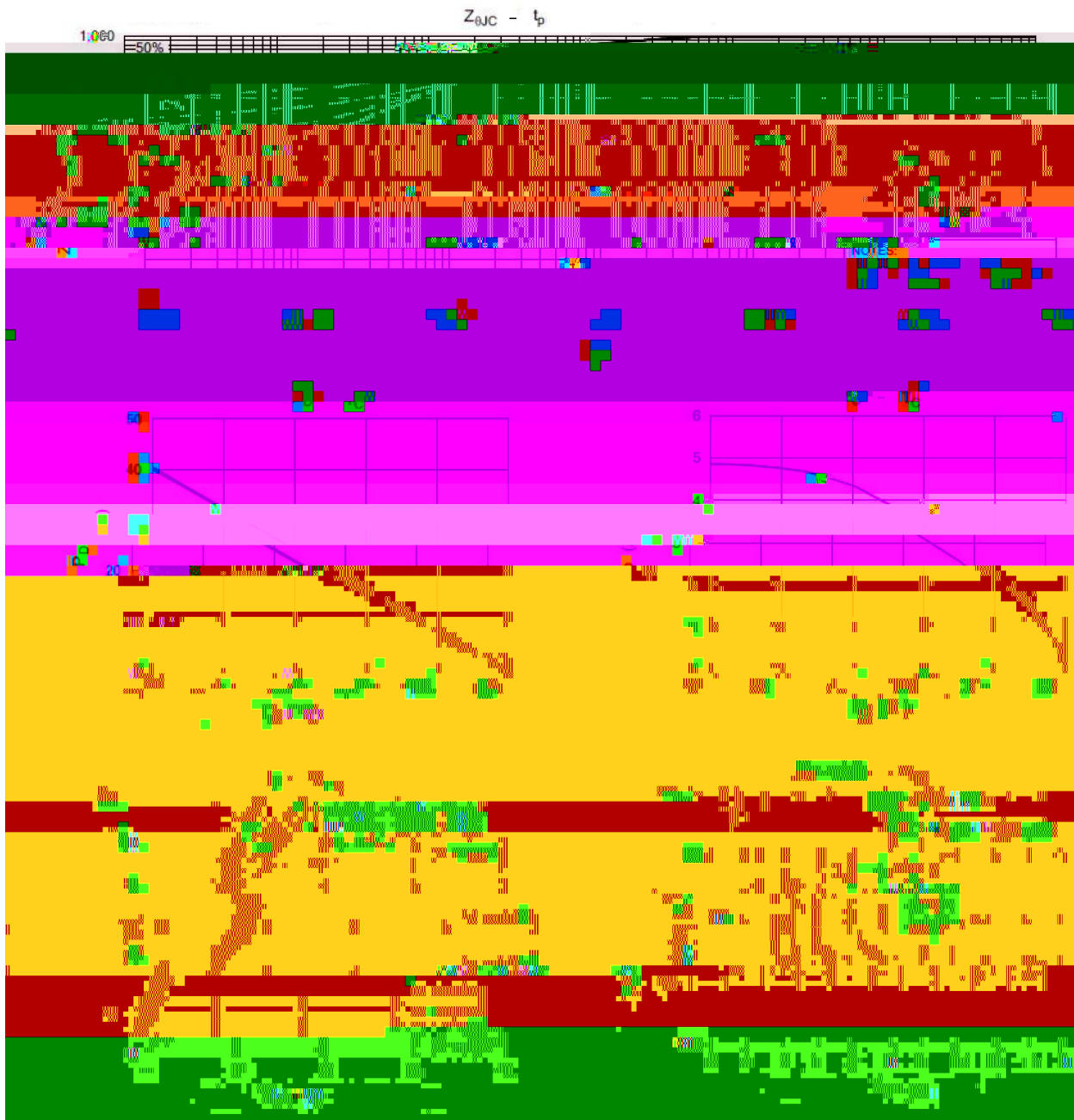
/ h_{FE} Classifications & Marking

See Marking Instructions.

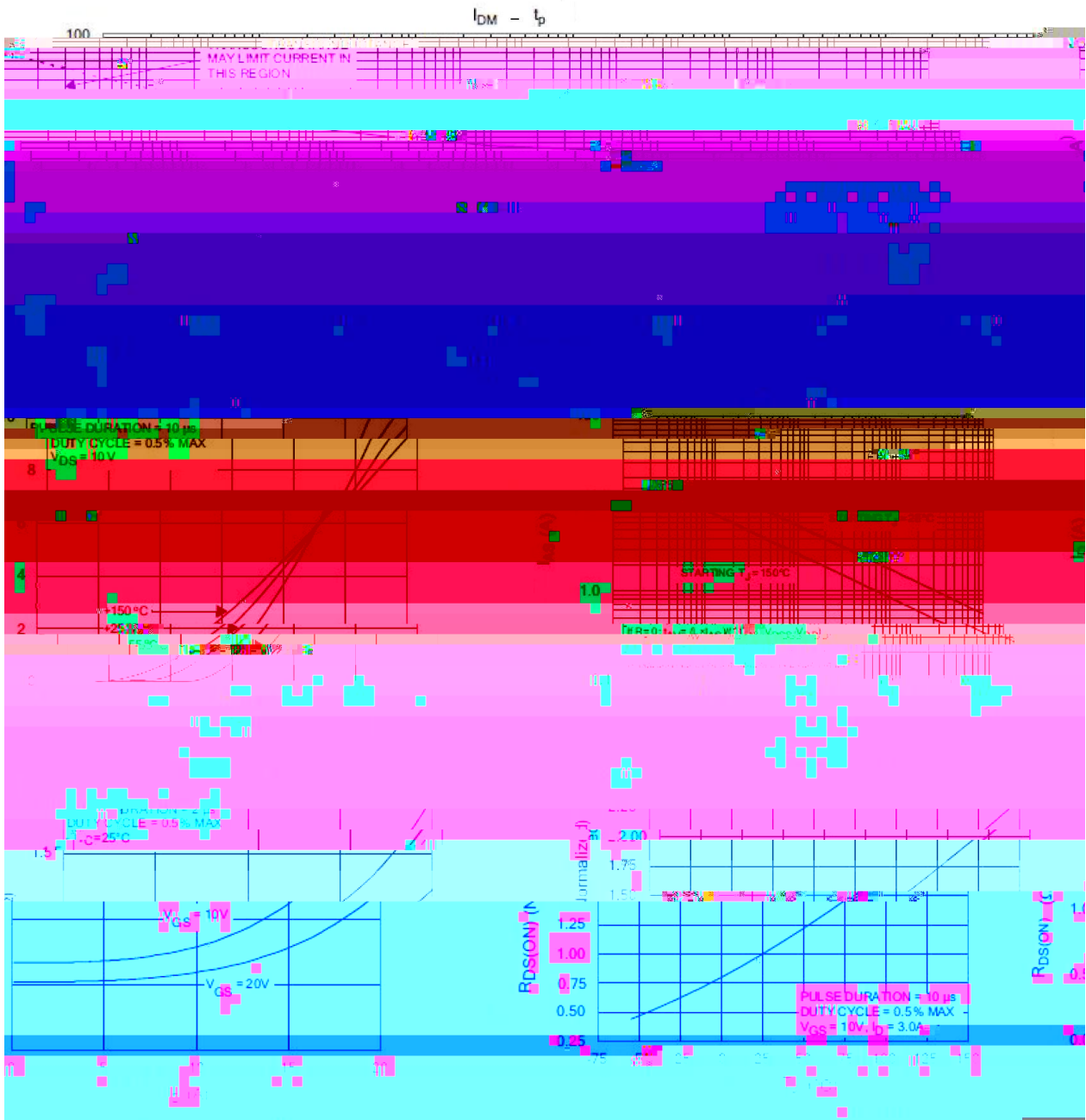
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	200	V
Drain Current	$I_D(Tc=25)$	4.8	A
Drain Current	$I_D(Tc=100)$	3.4	A
Drain Current - Pulsed	I_{DM}^{a1}	19.2	A
Gate-Source Voltage	V_{GSS}	± 30	V
Avalanche Current	I_{AR}^{a1}	1.6	A
Single Pulsed Avalanche Energy	E_{AS}^{a2}	125	mJ
Repetitive Avalanche Energy	E_{AR}^{a1}	12	mJ
Power Dissipation	$P_D(Tc=25)$	40	W
Derating Factor above 25	P_D	0.32	W/
Peak Diode Recovery dv/dt	dv/dt^{a3}	5	V/ns

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1MHz$		255		pF
Output Capacitance	C_{oss}			52		pF
Reverse Transfer Capacitance	C_{rss}			8		pF
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=100V$ $I_D=4.8A$ $R_G=10$ $V_{GS}=10V$		7		ns
Turn-On Rise Time	t_r			13		ns
Turn-Off Delay Time	$t_{d(off)}$			27		ns
Turn-Off Fall Time	t_f			11		ns
Total Gate Charge	Q_g	$V_{DD}=100V$ $I_D=4.8A$ $V_{GS}=10V$		7		nC
Gate to Source Charge	Q_{gs}			2		nC
Gate to Drain (" Miller")Charge	Q_{gd}			3		nC
Continuous Source Current (Body Diode)	I_s					

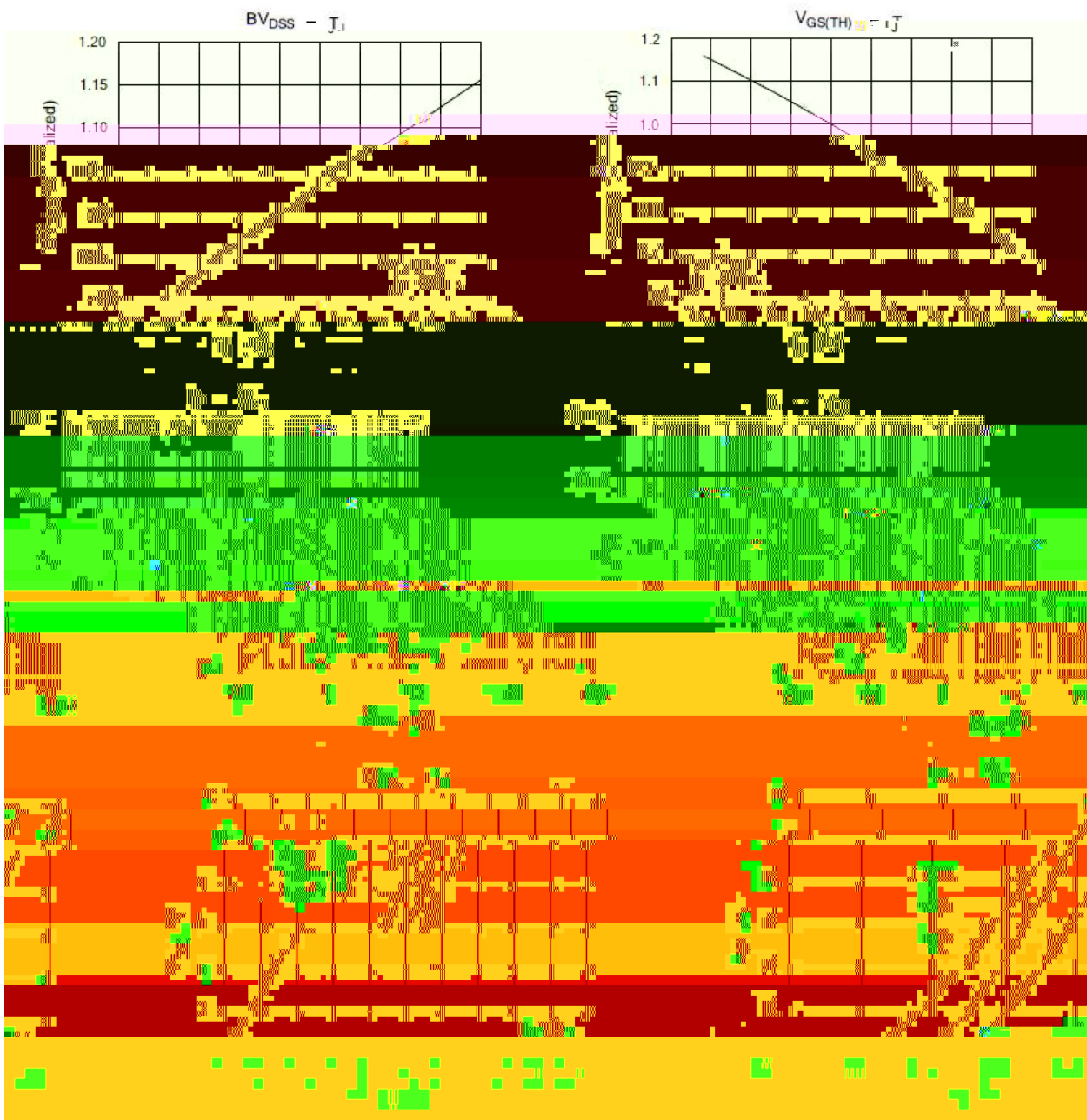
/ Electrical Characteristic Curve



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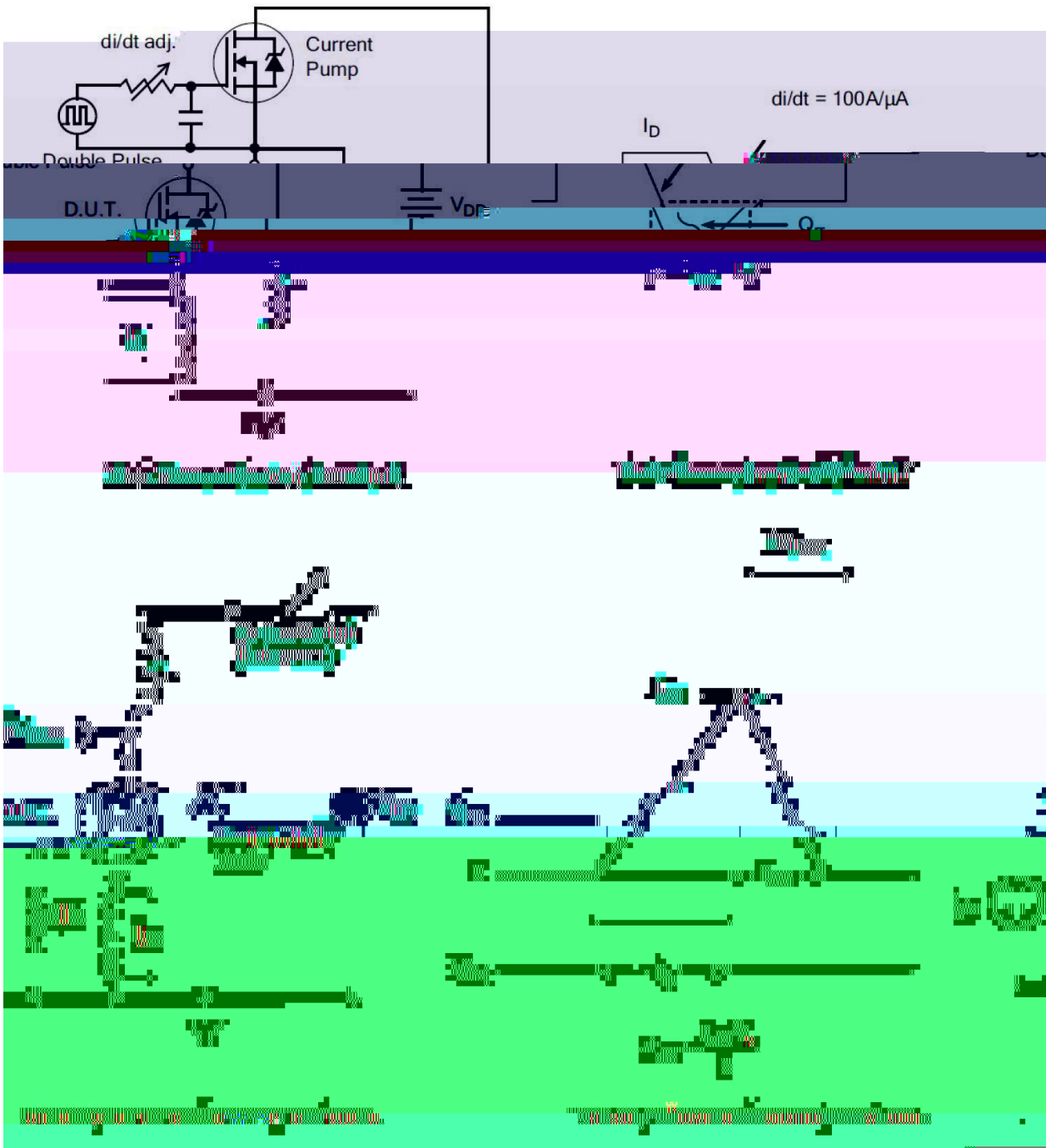
/ Electrical Characteristic Curve



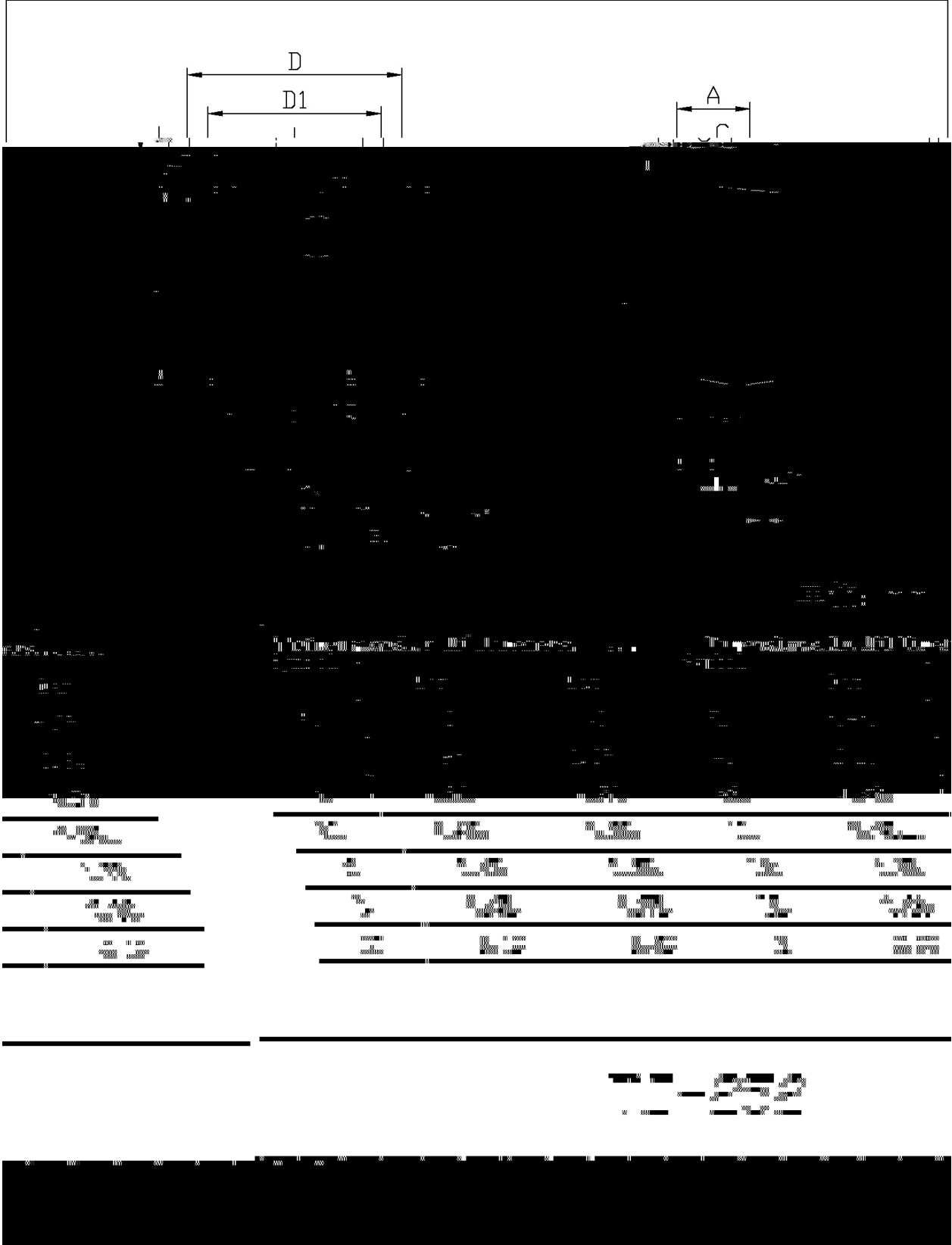
/ Test Circuit and Waveform



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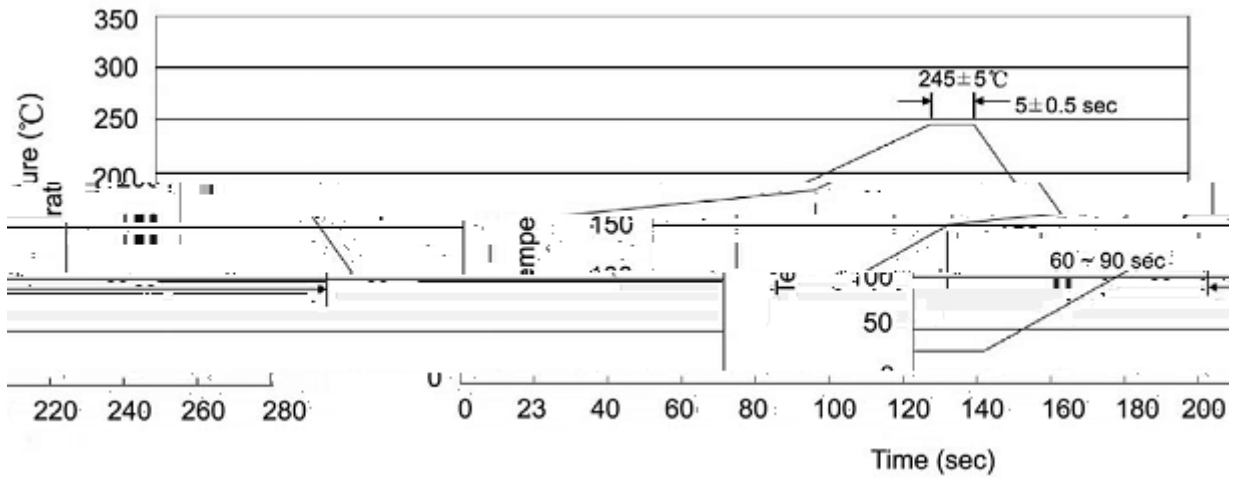


/ Package Dimensions



BRD5N20
Rev.D Nov.-2015

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



Note:

- | | | | | | |
|---|-------|-----|----|-----------|---|
| 1 | 25 | 150 | 60 | 90sec; | 1.Preheating:25~150 , 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

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