/ Descriptions

SOP-8 P MOS

P-Channel Enhancement Mode Field Effect Transistor in a SOP-8 Plastic Package.

/ Features

V_{DS} (V) = -30V

I_D = -8.8 A

$R_{DS(ON)}$ < 23m (V_{GS} = -10V)

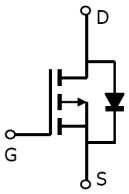
$R_{DS(ON)}$ < 35m (V_{GS} = -4.5V)

HF Product.

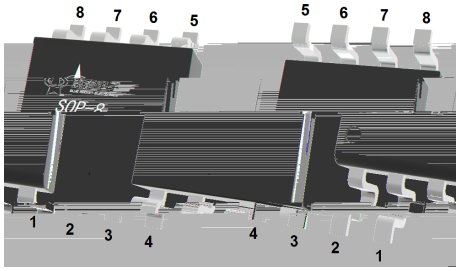
/ Applications

Power Management in Notebook computer, Portable Equipment and Battery powered systems.

/ Equivalent Circuit



/ Pinning



PIN1	S	PIN 2	S	PIN 3	S	PIN 4	G
PIN 5	D	PIN 6	D	PIN 7	D	PIN 8	D

/ Marking

See Marking Instructions.

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	-30	V
Gate-Source Voltage		V_{GSS}	±20	V
Continuous Drain Current[A]		I_D (T_a=25°C)	-8.8	A
Continuous Drain Current[A]		I_D (T_a=70°C)	-7.0	A
Pulsed Drain Current[B]		I_{DM}	-50	A
Power Dissipation for Single Operation[A]		P_D (T_a=25)	2.5	W
Power Dissipation for Single Operation[A]		P_D (T_a=70)	1.2	W
Avalanche Current		I_{AR}	-20	A
Repetitive avalanche energy 0.3mH[B]		E_{AR}	50	mJ
Maximum Junction Temperature		T_j	150	
Storage Temperature Range		T_{stg}	-55 +150	
Thermal Resistance-Junction to Ambient[A]	t ≤ 10s	$R_{\theta JA}$	50	/W
Thermal Resistance-Junction to Ambient[A]	Steady State	$R_{\theta JA}$	125	/W
Maximum Junction-to-Lead[C]		$R_{\theta JL}$	25	/W

Note:

A: The value of $R_{\theta JA}$ is measured with the device mounted on 1 in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A = 25°C.The value in any given application depends on the user's specific board design. The current rating is based on the t 10s thermal resistance rating.

B: Repetitive rating, pulse width limited by junction temperature.

C. The $R_{\theta JA}$ is the sum of the thermal impedance from junction to lead $R_{\theta JL}$ and lead to ambient.

D. The static characteristics in Figures 1 to 6 are obtained using <300μs pulses, duty cycle 0.5% max.

E. These tests are performed with the device mounted on 1 in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A=25°C. The SOA curve provides a single pulse rating.

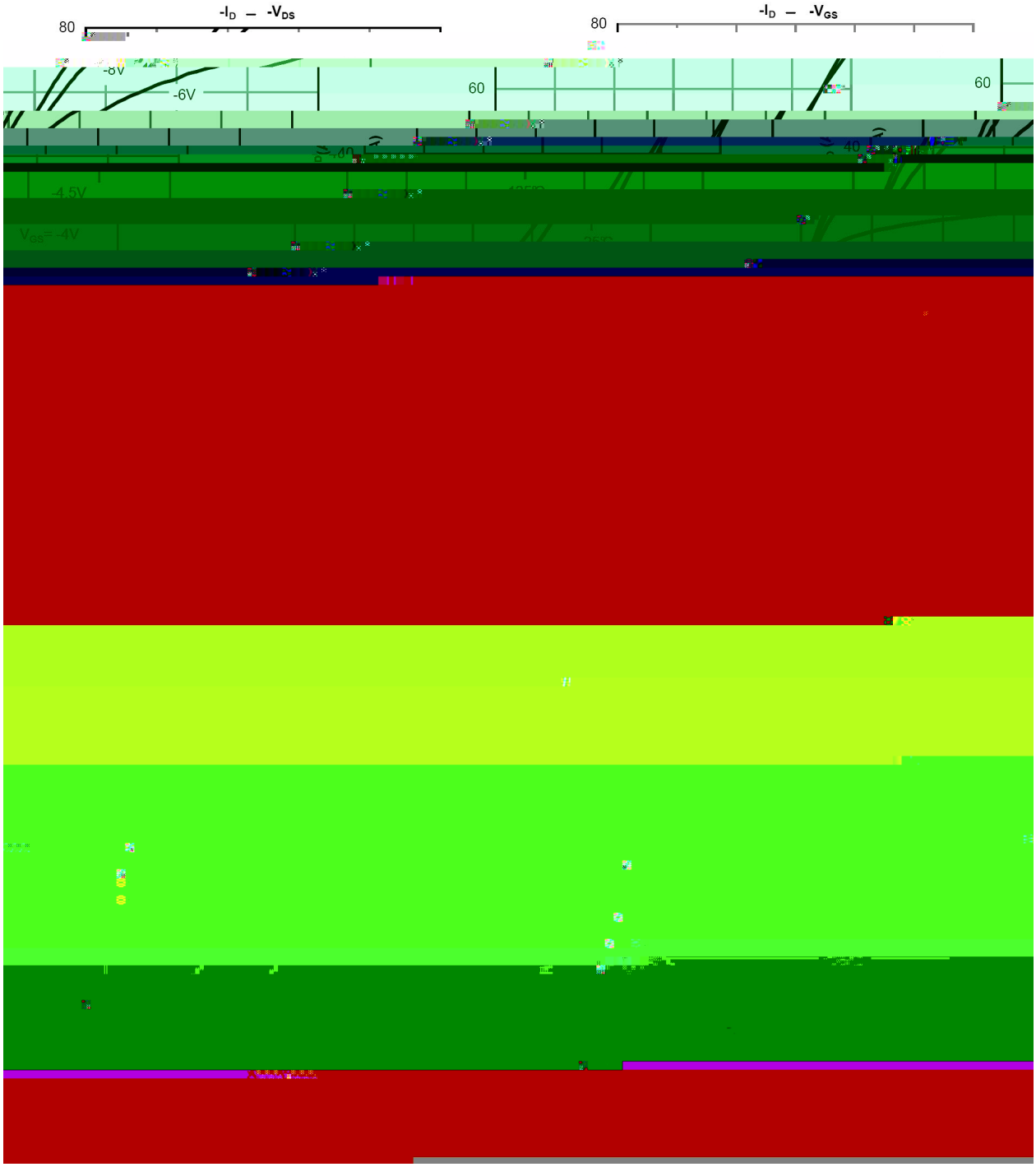
F. The current rating is based on the t 10s thermal resistance rating.

G. E_{AR} and I_{AR} ratings are based on low frequency and duty cycles to keep T_j=25C.

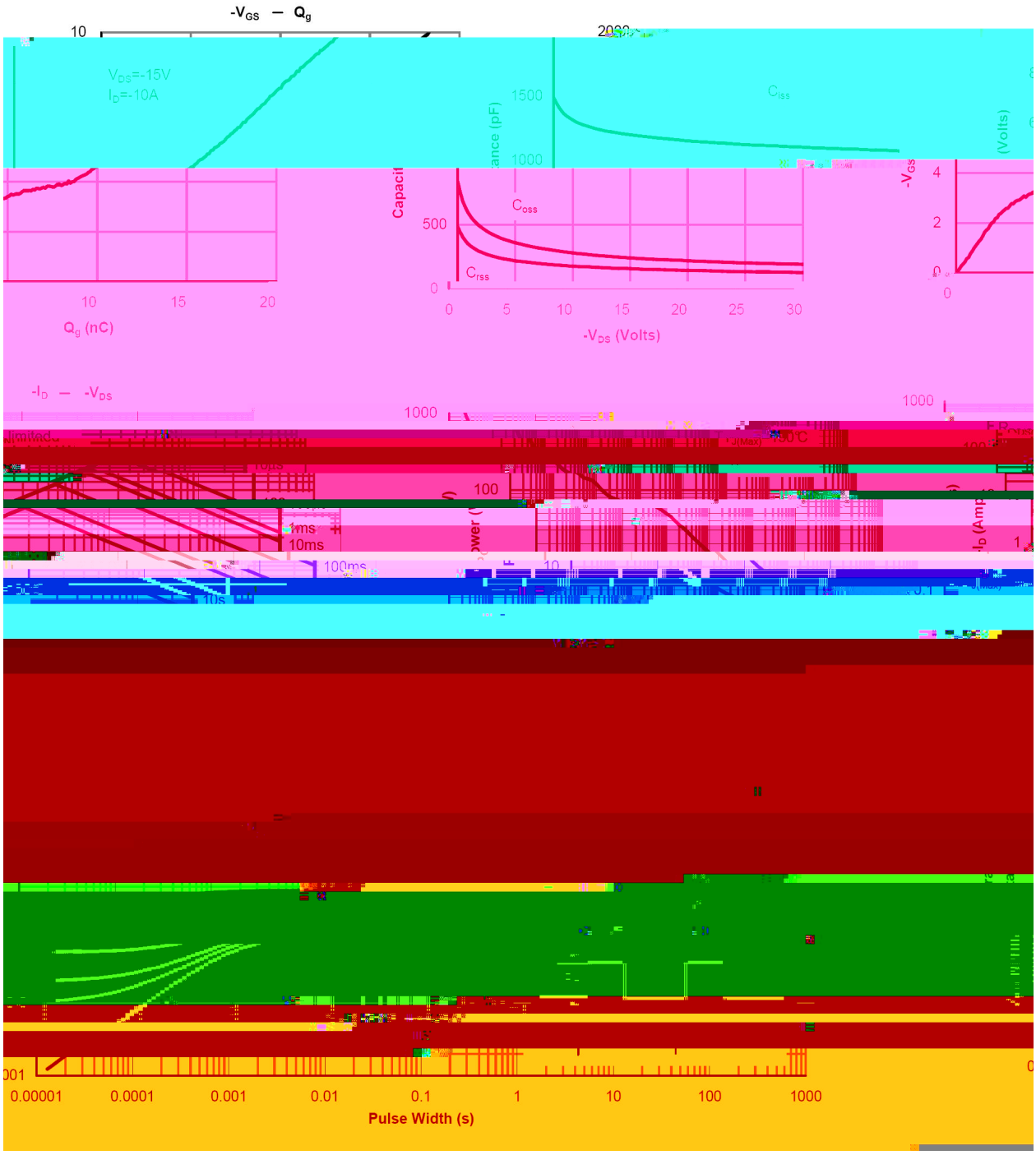
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=-250 A V_{GS}=0V	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-30V V_{GS}=0V			-1.0	A
		V_{DS}=-30V V_{GS}=0V T_J=55°C			-5.0	
Gate-Body leakage current	I_{GSS}	V_{DS}=0V V_{GS}=±20V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=VGS I_D=-250 A	-1.0	-1.7	-3.0	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=-10V I_D=-8.8A		18	23	m
		V_{GS}=-10V I_D=-8.8A T_J=125°C		25	32	
		V_{GS}=-4.5V I_D=-6.7A		27	35	
Forward Transconductance	g_{FS}	V_{DS}=-5V I_D=-8.8A		12		S
Diode Forward Voltage	V_{SD}	I_S=-2.1A V_{GS}=0V		-0.73	-1.2	V
Maximum Body-Diode Continuous Current	I_S				-2.1	A
Total Gate Charge	Q_g	V_{GS}=-5V V_{DS}=-15V I_D=-8.8A		17	24	nC
Gate-Source Charge	Q_{gs}			5		
Gate-Drain Charge	Q_{gd}			6		
Input Capacitance	C_{iss}	V_{GS}=0V V_{DS}=-15V f=1MHz		1604		pF
Output Capacitance	C_{oss}			408		
Reverse Transfer Capacitance	C_{rss}			202		
Turn-on Delay Time	$t_{d(ON)}$	V_{GS}=-10V V_{DS}=-15V I_D=-1A R_{GEN}=6		13	23	ns
Turn-on Rise Time	t_r			13.5	24	
Turn-off Delay Time	$t_{d(OFF)}$			42	68	
Turn-off Fall Time	t_f			25	40	

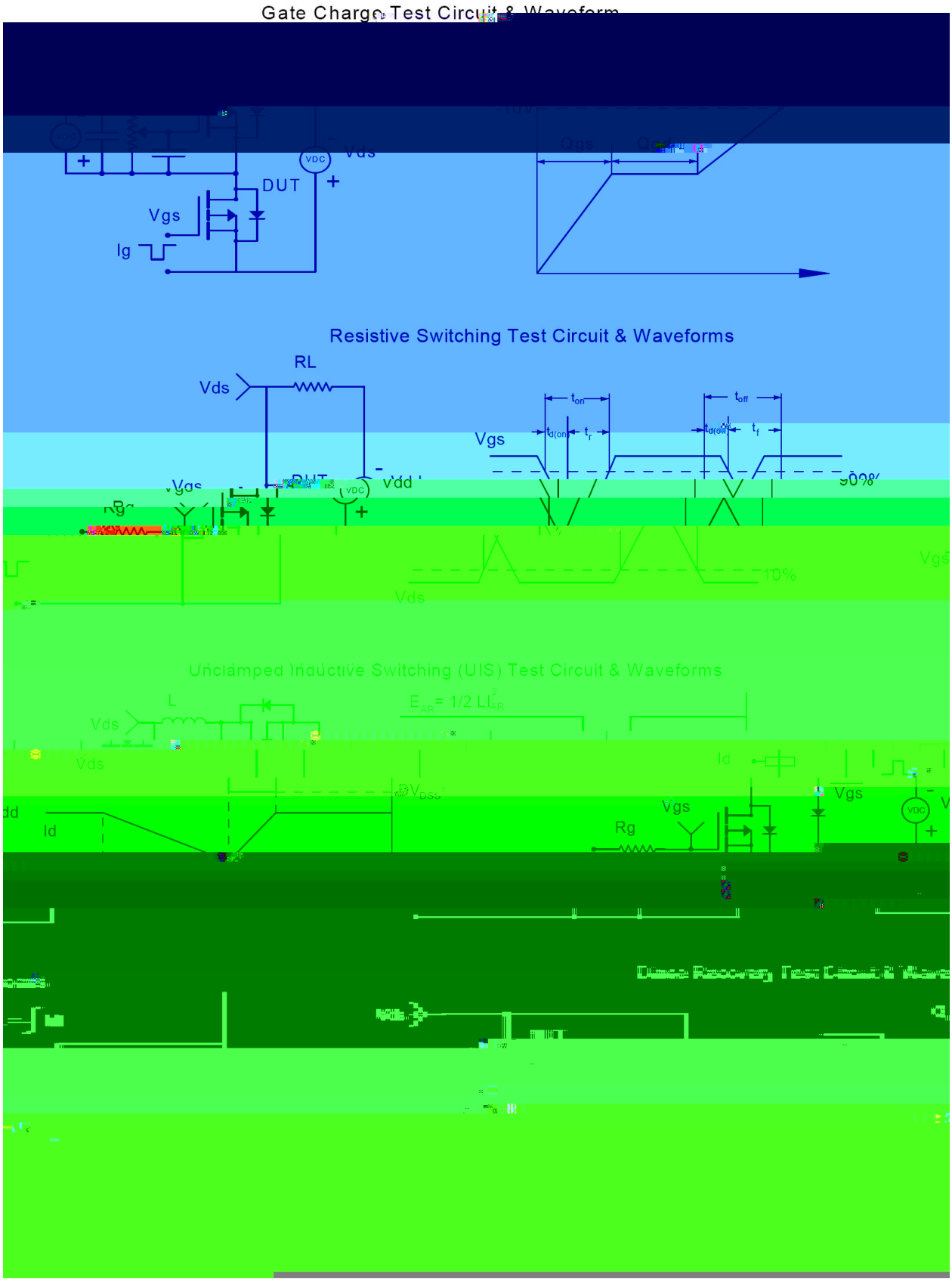
/ Electrical Characteristic Curve



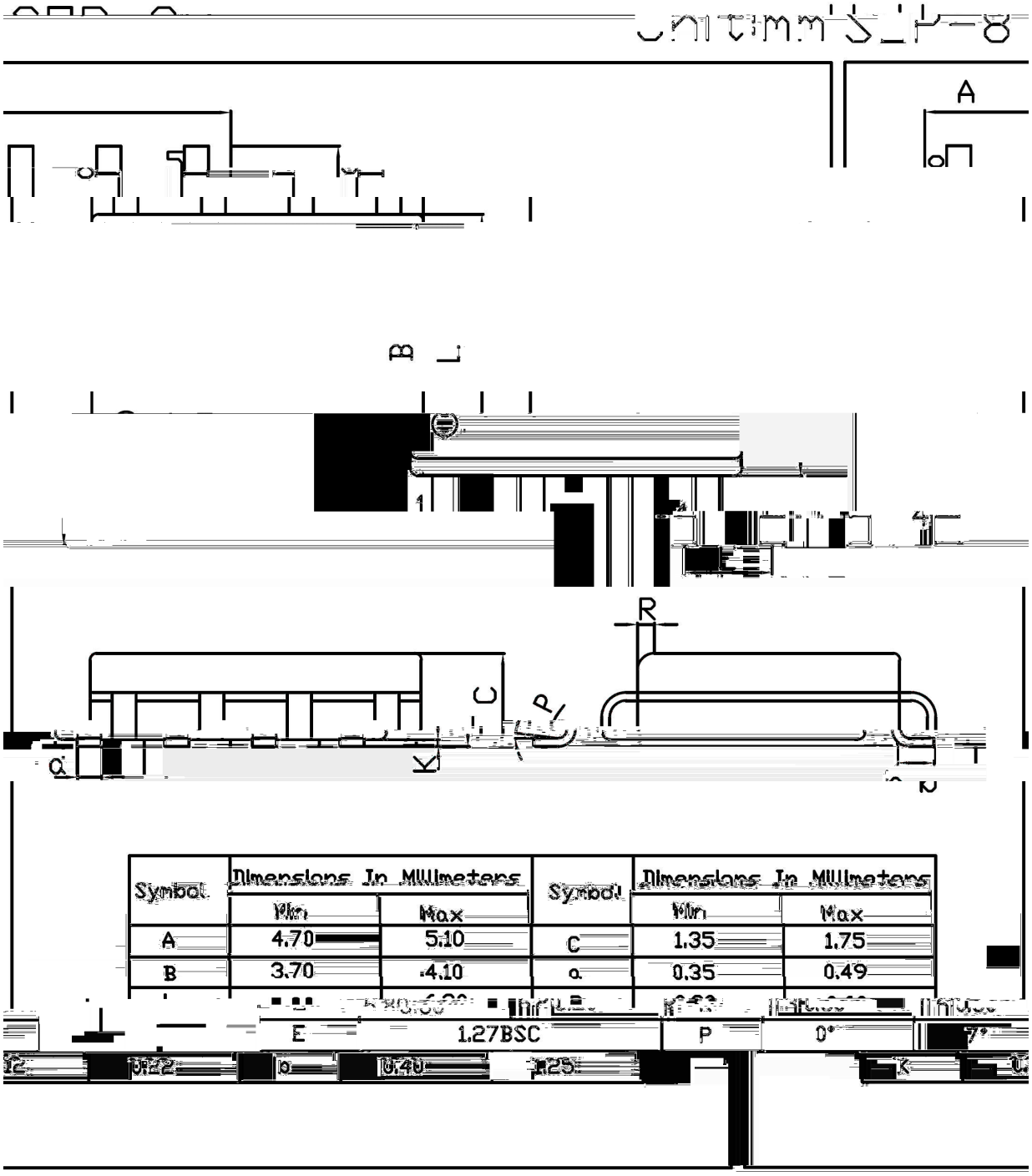
/ Electrical Characteristic Curve



/ Test Waveform

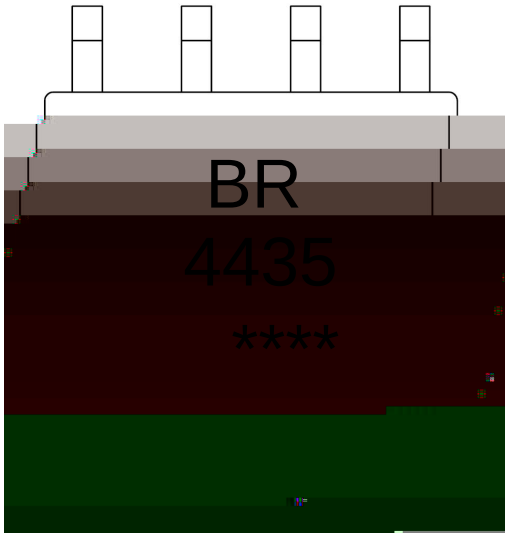


/ Package Dimensions



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	4.70	5.10	C	1.35	1.75
B	3.70	4.10	α	0.35	0.49
E	1.27BSC		P	0°	7°

/ Marking Instructions



BR

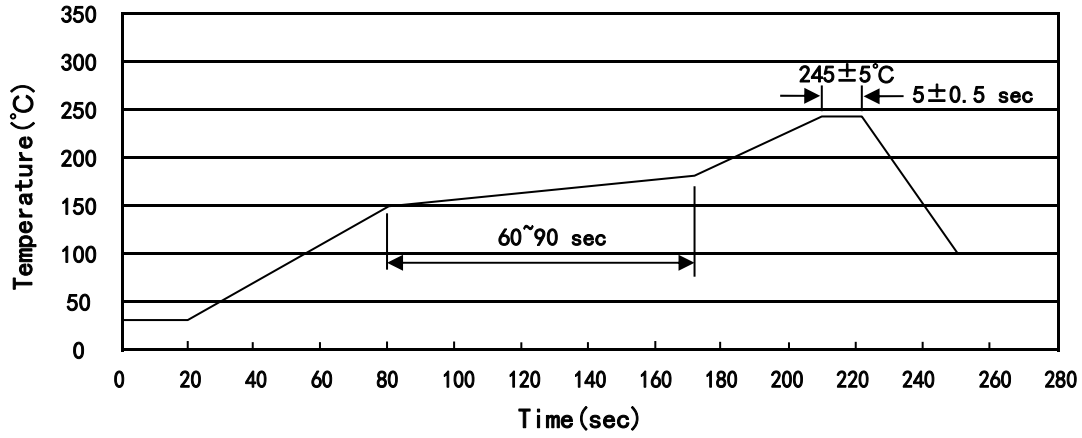
4435

****

Note:

BR:	Company Code
4435:	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 mm³)
	Units/Reel /	Reels/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Reel	Inner Box	Outer Box
SOP/ESOP-8	4,000	2	8,000	6	48,000	13 ×12	360×360×50	380×335×366

/ Notices