

/ Descriptions

TO-92LM NPN Silicon NPN transistor in a TO-92LM Plastic Package.

/ Features

High Voltage ,low. Current.

/ Applications

Low frequency power amplifier, electronic governor applications.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Collector PIN 3 Emitter

/ h_{FE} Classifications & Marking

h_{FE} Classifications Symbol	D	E	F	G
h_{FE} Range	60 120	100 200	160 320	280 560

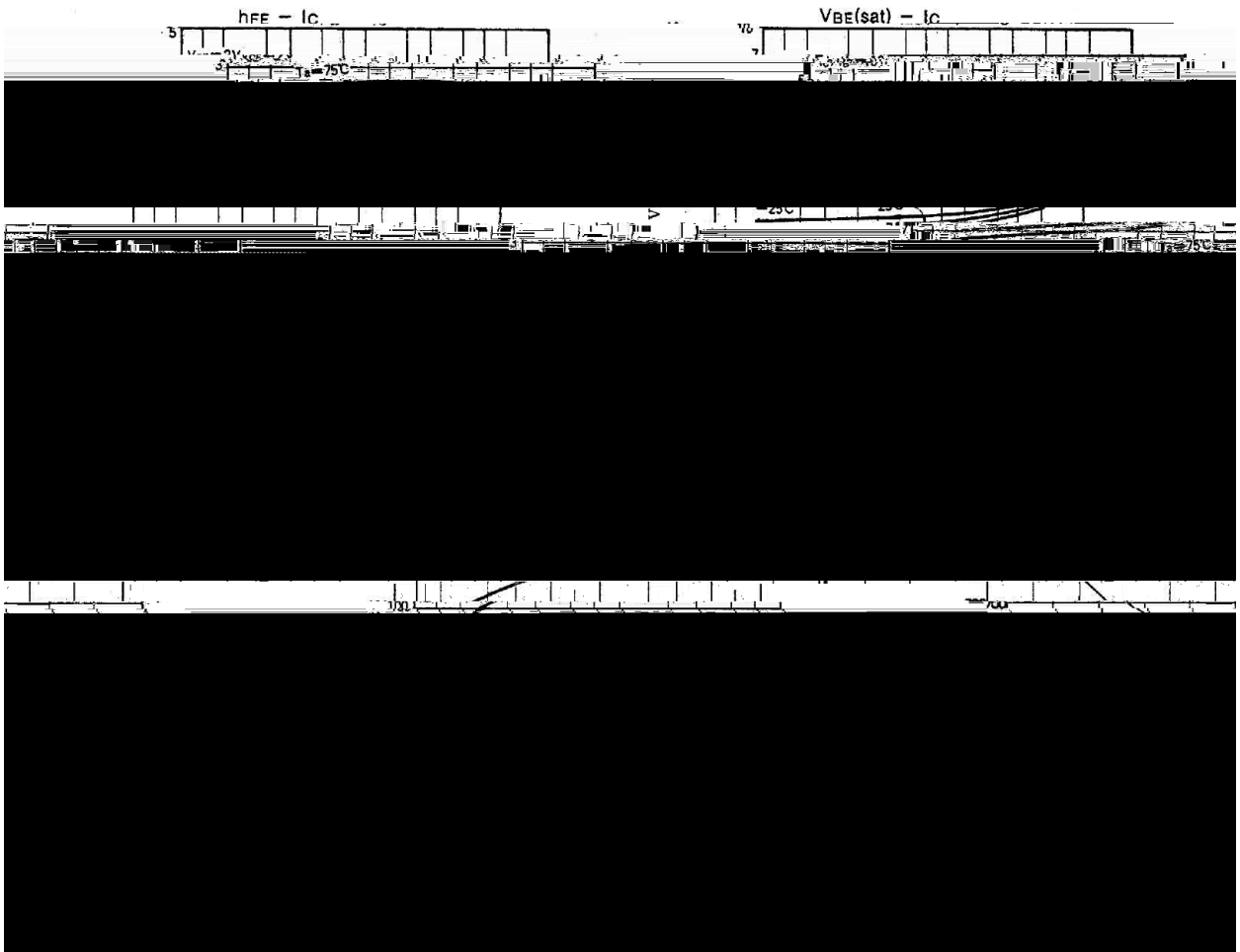
/ Absolute Maximum Ratings($T_a=25$)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	25	V
Collector to Emitter Voltage	V_{CEO}	25	V
Emitter to Base Voltage	V_{EBO}	5.0	V
Collector Current (DC)	I_C	1.0	A
Collector Current (Pulse)	I_{CP}	2.0	A
Collector Power Dissipation	P_C	900	mW
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	

/ Electrical Characteristics($T_a=25$)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	$I_C=10\mu A$ $I_E=0$	25			V
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C=1.0mA$ $I_B=0$	25			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E=10\mu A$ $I_C=0$	5.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=20V$ $I_E=0$			1.0	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=4.0V$ $I_C=0$			1.0	μA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=2.0V$ $I_C=50mA$	60		560	
	$h_{FE(2)}$	$V_{CE}=2.0V$ $I_C=1.0A$	30			
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=500mA$ $I_B=50mA$		0.1	0.3	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=500mA$ $I_B=50mA$		0.85	1.2	V
Transition Frequency	f_T	$V_{CE}=10V$ $I_C=50mA$		180		MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=10V$ $I_E=0$ $f=1.0MHz$		15		pF

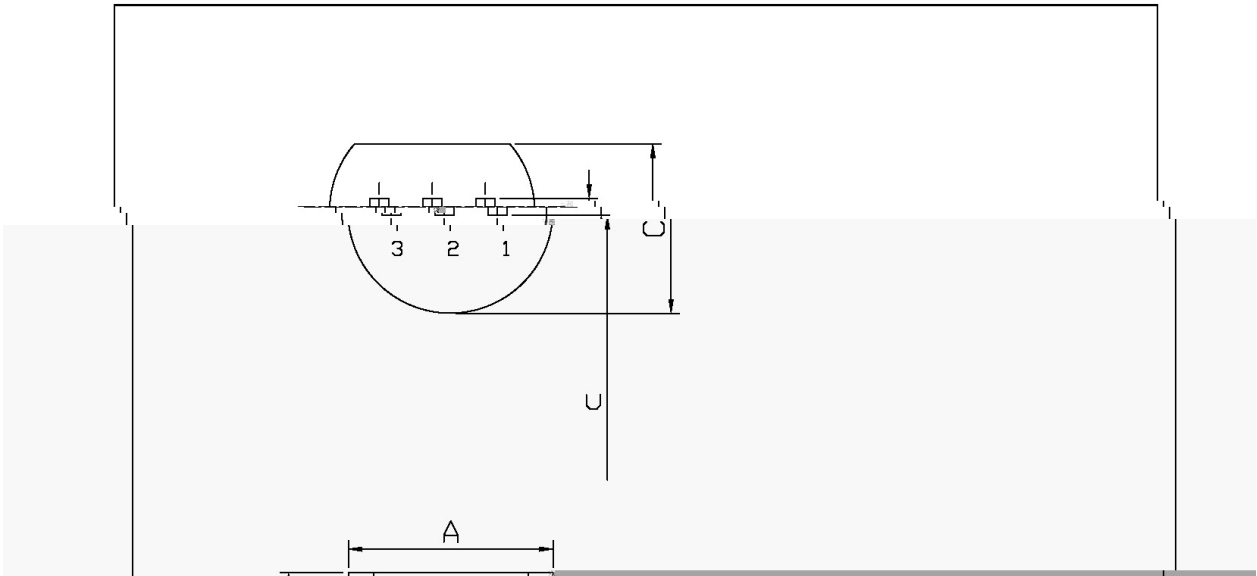
/ Electrical Characteristic Curve



/ Package Dimensions

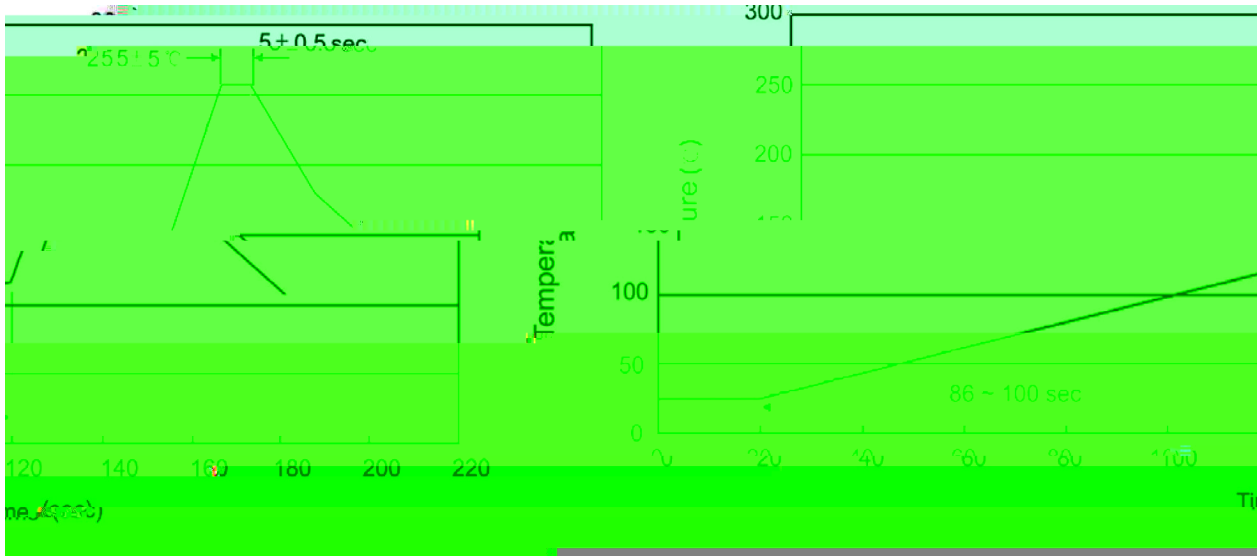
TO-92LM

Unit: mm



Symbol	Dimensions In Millimeters	
	Min	Max
A	4.00	5.00
B	1.00	1.50
C	0.50	0.75
D	0.50	0.75
E	0.50	0.75
F	0.50	0.75
G	0.50	0.75
H	0.50	0.75
I	0.50	0.75
J	0.50	0.75
K	0.50	0.75
L	0.50	0.75
M	0.50	0.75
N	0.50	0.75
O	0.50	0.75
P	0.50	0.75
Q	0.50	0.75
R	0.50	0.75
S	0.50	0.75
T	0.50	0.75
U	0.50	0.75
V	0.50	0.75
W	0.50	0.75
X	0.50	0.75
Y	0.50	0.75
Z	0.50	0.75

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



Note:

- | | | | | | |
|---|-------|-----|-----------|--------|---|
| 1 | 25 | 150 | 60 | 90sec; | 1.Preheating:25~150 , Time:60~90sec. |
| 2 | 255±5 | | 5±0.5sec; | | 2.Peak Temp.:255±5 , Duration:5±0.5sec. |
| 3 | | 2 | 10 | /sec. | 3. Cooling Speed: 2~10 /sec. |

/ Resistance to Soldering Heat Test Conditions

270±5 10±1 sec. Temp.:270±5 Time:10±1 sec

/ Packaging SPEC.

/ BULK

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm3)		
	Units/Bag 只/袋	Bags/Inner Box 袋/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Bag 袋	Inner Box 盒	Outer Box 箱
TO-92LM	1,000	8	8,000	5	40,000	135×190	237×172×102	560×245×195

/ AMMO

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm3)	
	Units/tape 只/纸带	Tape/Inner Box 纸带/盒	Rows/Inner Box 纸带层/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Inner Box 盒	Outer Box 箱
TO-92LM	2,500	1	100	10	25,000	328×230×42	小箱 480×346×235 大箱 547×407×268

/ Notices