

/ Descriptions

TO-126F NPN Silicon NPN transistor in a TO-126F Plastic Package.

/ Features

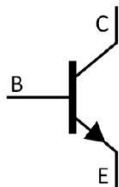
f_T

Low $V_{CE(sat)}$, high current and high f_T , excellent linearity of h_{FE} , fast switching time.

/ Applications

Relay drivers, high-speed inverters, general high-current switching applications.

/ Equivalent Circuit



/ Pinning



PIN1 Emitter PIN 2 Collector PIN 3 Base

/ h_{FE} Classifications & Marking

h_{FE} Classifications Symbol	M	L	K
h_{FE} Range	100 200	160 320	200 400

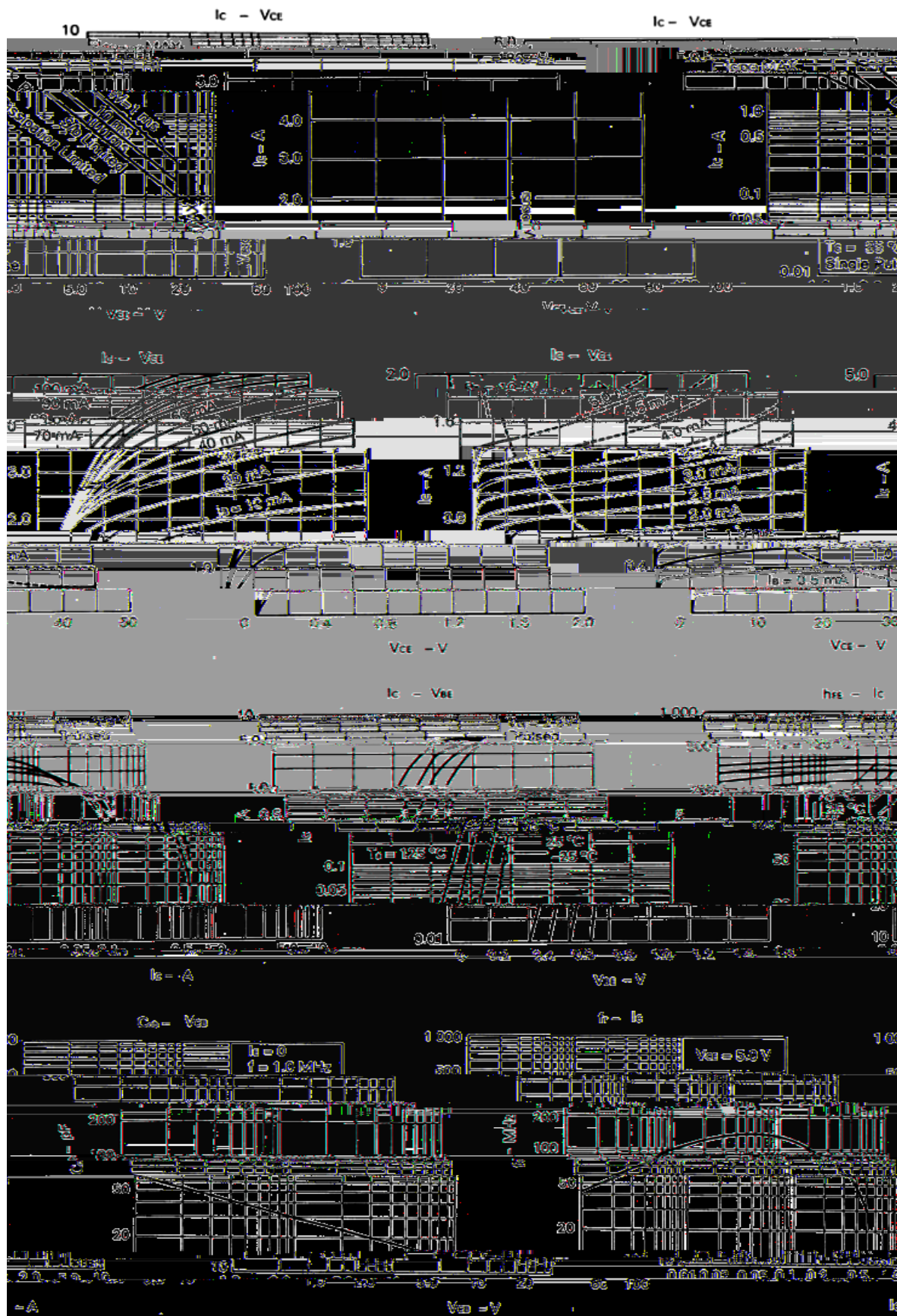
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	60	V
Collector to Emitter Voltage	V_{CEO}	60	V
Emitter to Base Voltage	V_{EBO}	7.0	V
Collector Current - Continuous	I_C	3.0	A
Collector Power Dissipation	P_C	2.0	W
Collector Power Dissipation	$P_C(T_C=125)$	10	W
Junction Temperature	T_J	150	
Storage Temperature Range	T_{stg}	-55 150	

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	$I_C=100\mu A$ $I_E=0$	60			V
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C=1.0mA$ $I_B=0$	60			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E=100\mu A$ $I_C=0$	7.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=60V$ $I_E=0$			10.0	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=7.0V$ $I_C=0$			10.0	μA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=2.0V$ $I_C=600mA$	100		400	
	$h_{FE(2)}$	$V_{CE}=2.0V$ $I_C=200mA$	60			
	$h_{FE(3)}$	$V_{CE}=2.0V$ $I_C=2.0A$	50			
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=1.5A$ $I_B=150mA$			0.25	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=1.5A$ $I_B=150mA$			1.2	V
Transition Frequency	f_T	$V_{CE}=5.0V$ $I_C=1.5A$		120		MHz
Reverse Transfer Capacitance	C_{ob}	$V_{CB}=10V$ $I_E=0$ $f=1.0MHz$		30		pF
Turn-On Time	t_{on}	$V_{CC}=10V$ $I_C=1A$ $I_{B1}=-I_{B2}=-0.1$			0.5	μs
Storage Time	t_{stg}				2.0	μs
Fall Time	t_f				0.5	μs

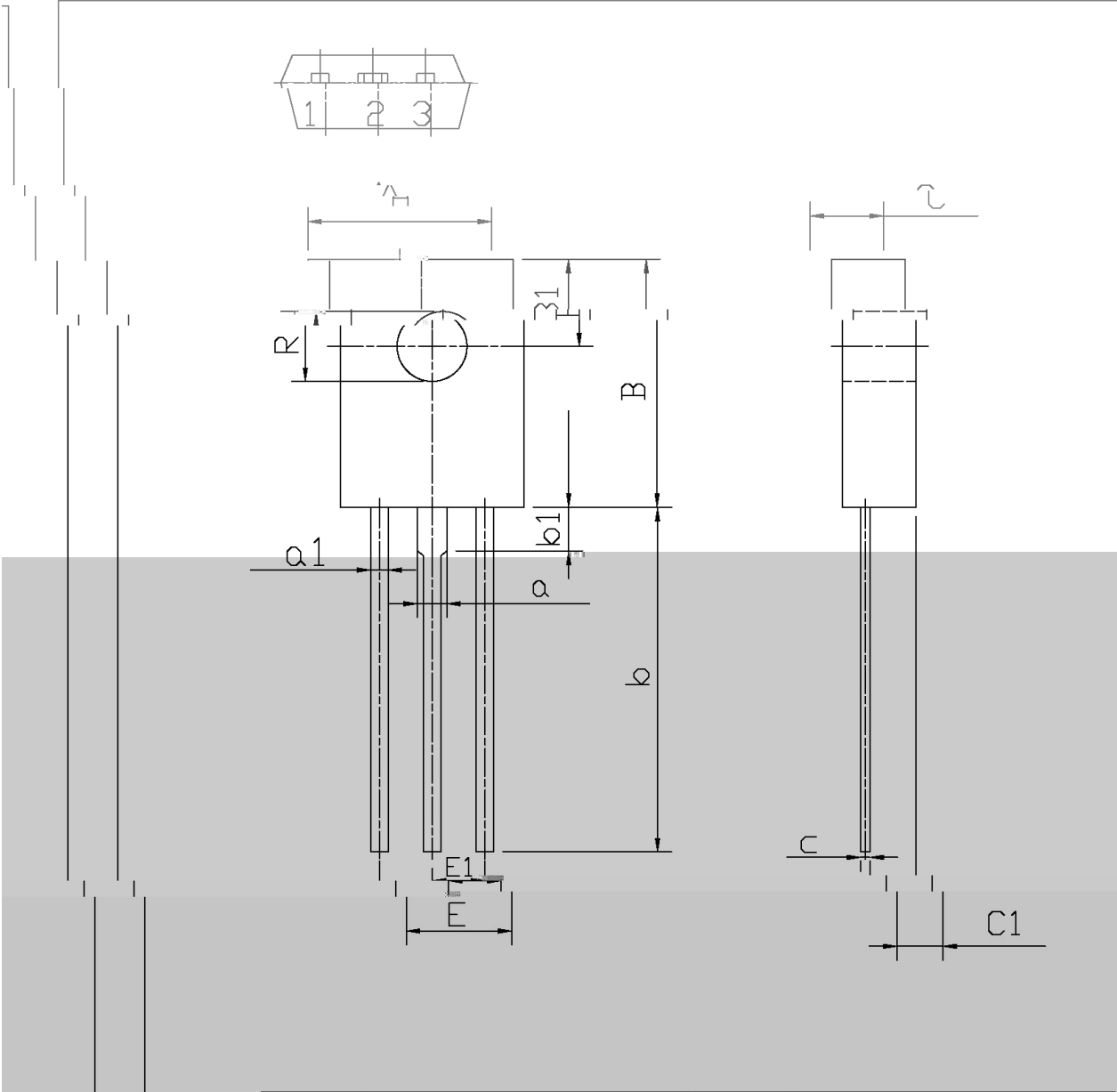
/ Electrical Characteristic Curve



/ Package Dimensions

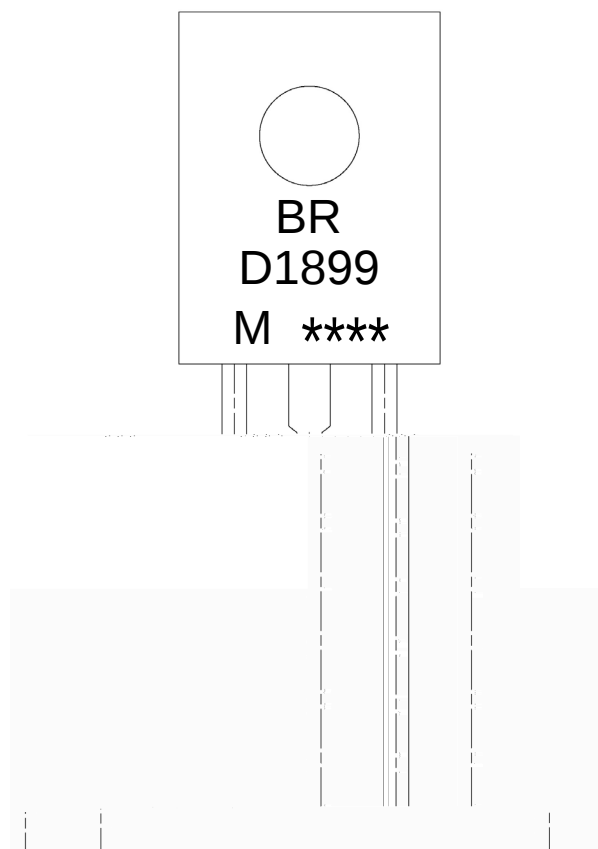
2SD1899L

单位: mm



Dimensions in Millimeters			Dimensions in Millimeters		
Symbol	Min	Max	Symbol	Min	Max
A	7.8	8.2	a1	0.65	0.8
B	10.8	11.2	E	4.4	4.8
B1	3.8	4.2	C	3.1	3.3
R	2.05	3.15	C1	1.9	2.1
b	14	16	c	0.3	0.5
b1	1.9		a	1.27	
E1	2.1	2.5			

/ Marking Instructions



BR

D1899

M: h_{FE}

Note:

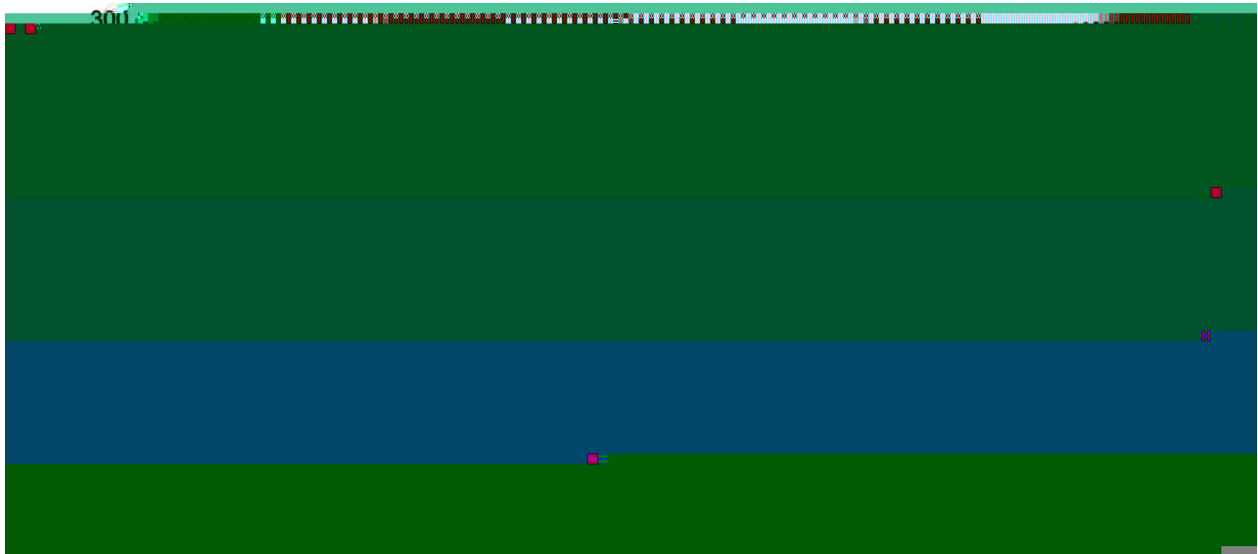
BR: Company Code

D1899: Product Type.

M: h_{FE} Classifications Symbol

****: Lot No. Code, code change with Lot No.

() / 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: mm ³)		
	Units/Tube 只/套管	Tubes/Inner Box 套管/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Tube 套管	Inner Box 盒	Outer Box 箱
TO-126/F	500	6	3,000	5	15,000	135×190	237×172×102	560×245×195

/ TUBE

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	Units/Tube 只/套管	Tubes/Inner Box 套管/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Tube 套管	Inner Box 盒	Outer Box 箱
TO-126/F	65	26	1,690	5	8,450	532×31×5.6	555×164×50	575×290×180

/ Notices