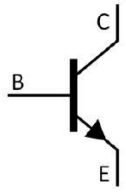
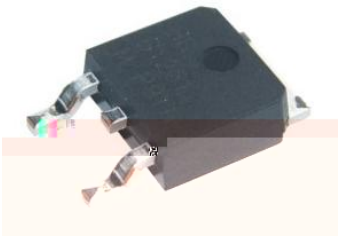
Silicon NPN transistor in a TO-252 Plastic Package.

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

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





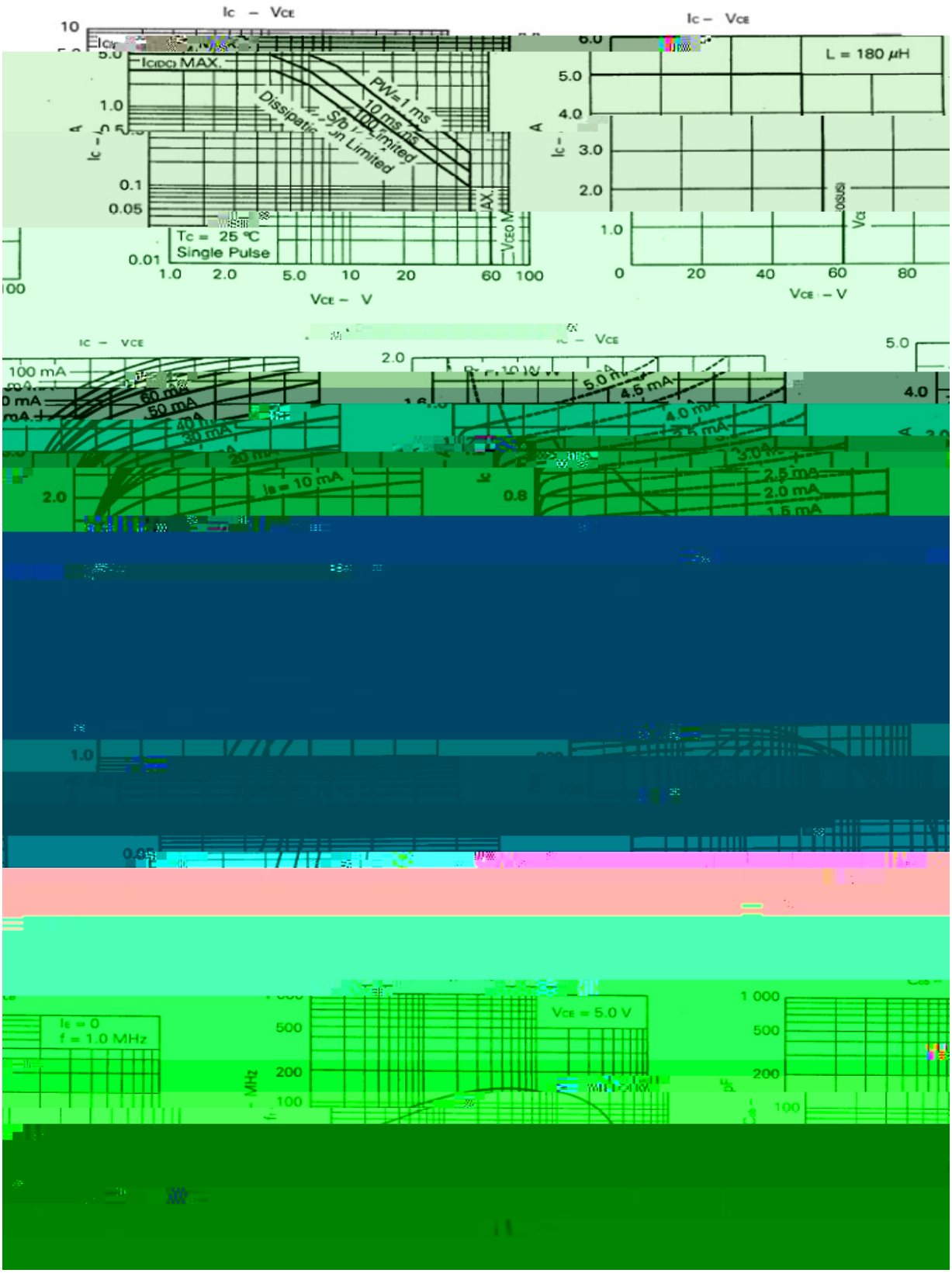
PIN1 Base PIN 2,4 Collector PIN 3 Emitter

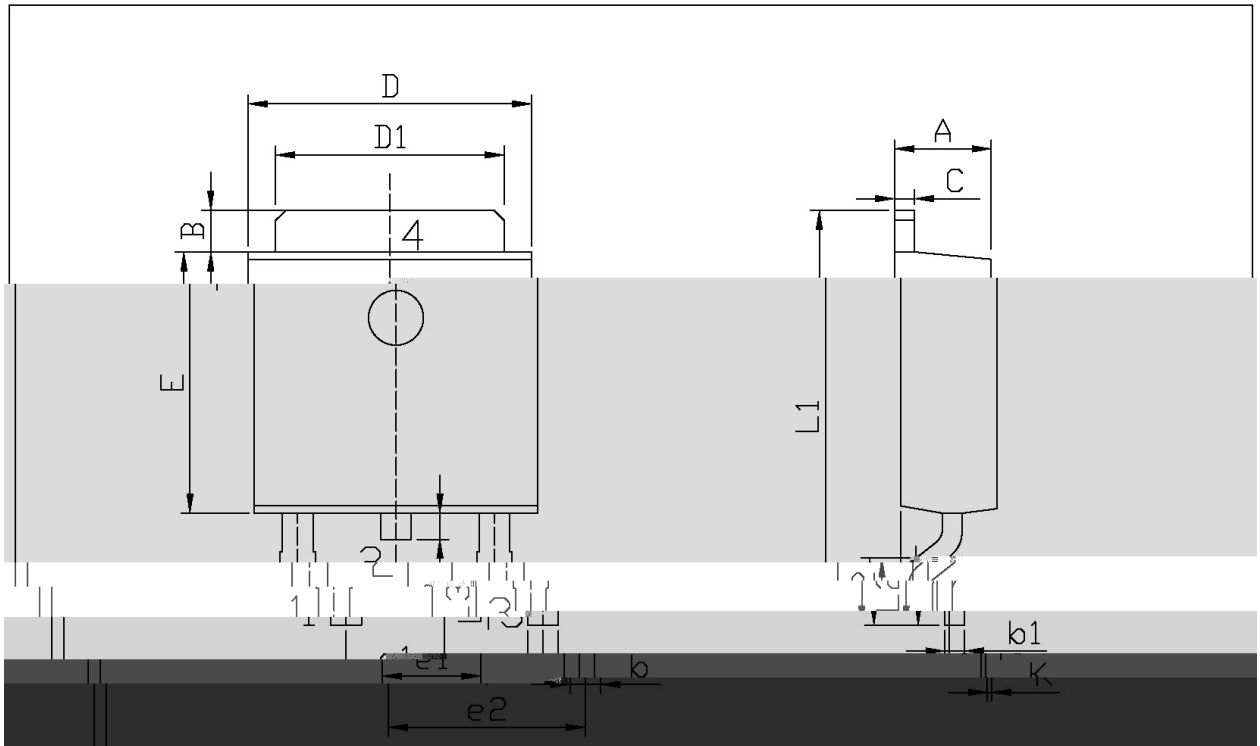
h_{FE} Classifications Symbol	M	L	K
h_{FE} Range	100 200	160 320	200 400

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
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55 150	℃

*When mounted on a 7.5×7.5×0.7mm ceramic board

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	I_C=100 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 A I_C=0	7.0			V
Collector Cut-Off Current	I_{CBO}	V_{CB}=60V I_E=0			10.0	A
Emitter Cut-Off Current	I_{EBO}	V_{EB}=7.0V I_C=0			10.0	A
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
Collector output 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	s
Storage Time	t_{stg}				2.0	s
Fall Time	t_f				0.5	s

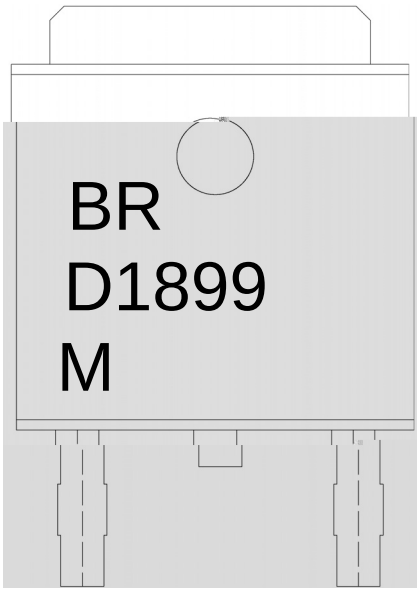

IC – VCE
IC(DC) MAX.
PW = 1 ms
10 ms
100 ms
Dissipation Limited
Tc = 25 °C
Single Pulse
VCE – V
IC – VCE
L = 180 μH
VCE – V
IC – VCE
100 mA
80 mA
50 mA
40 mA
30 mA
20 mA
IB = 10 mA
IC – VCE
5.0 mA
4.5 mA
4.0 mA
3.5 mA
3.0 mA
2.5 mA
2.0 mA
1.5 mA
IE = 0
f = 1.0 MHz
VCE = 5.0 V



单位：mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	2.20	2.40	E	5.95	6.25
B	0.95	1.25	e1	2.24	2.3
b	0.50	0.70	e2	4.43	4.7
b1	0.45	0.55	L1	9.45	9.9
C	0.45	0.55	L2	1.25	1.
D	6.45	6.75	L3	0.60	0.
D1	5.10	5.50	K	0.00	

TO-252



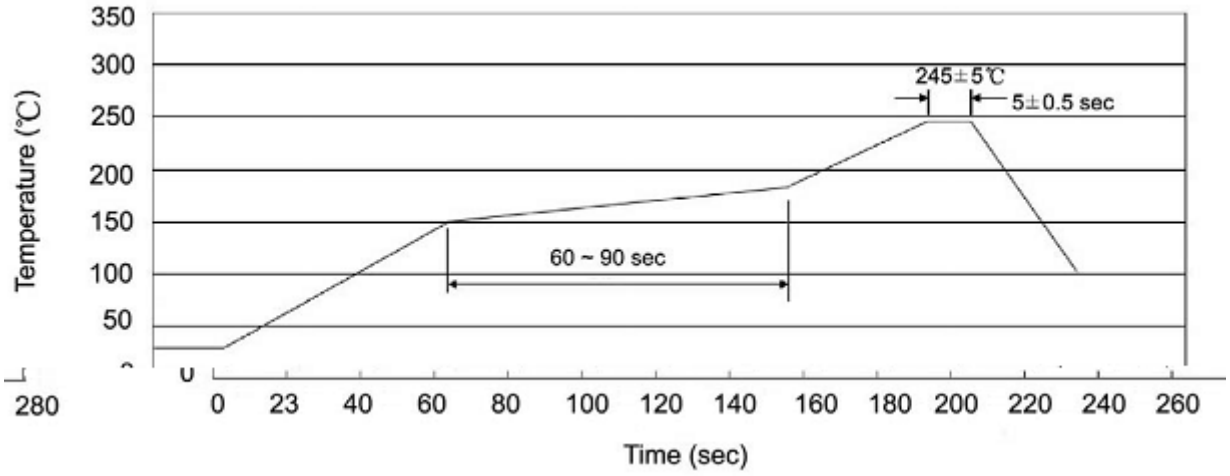
BR

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 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.

260 5 10 1 sec. Temp.:260±5℃ Time:10±1 sec

/ REEL

Package Type	Units					Dimension		(unit mm^3)

/ TUBE

Package Type	Units					Dimension		(unit mm^3)