

/ Descriptions

TO-252 NPN Silicon NPN transistor in a TO-252 Plastic Package.

/ Features

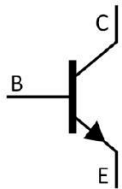
MBIT

High breakdown voltage, adoption of MBIT process excellent h_{FE} linearity.

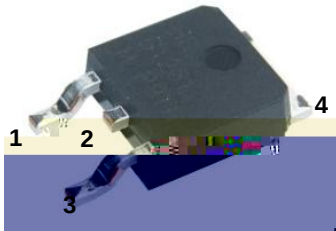
/ Applications

High voltage driver applications.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2,4 Collector PIN 3 Emitter

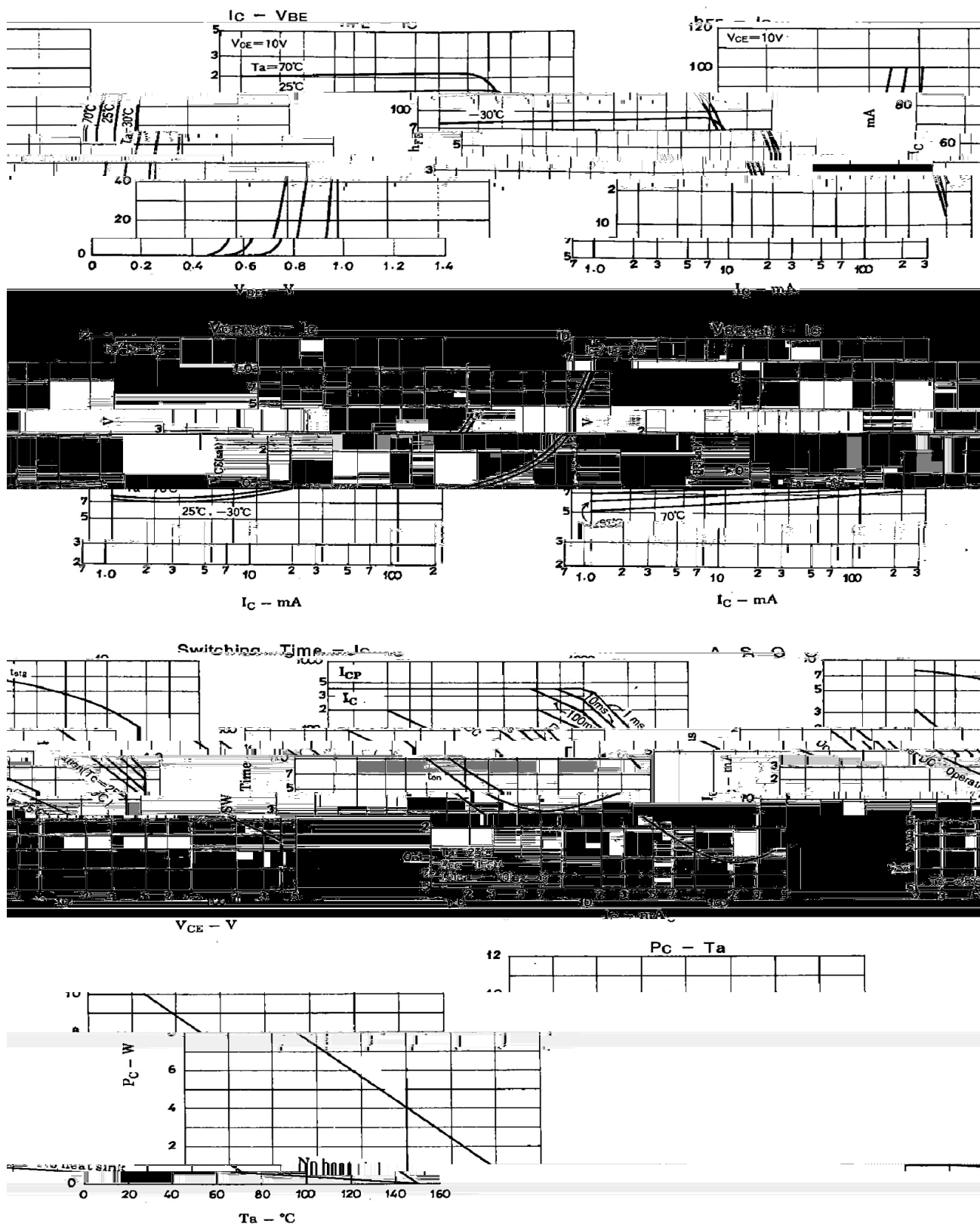
/ h_{FE} Classifications & Marking

h_{FE} Classifications Symbol	D	E
h_{FE} Range	60~120	100~200

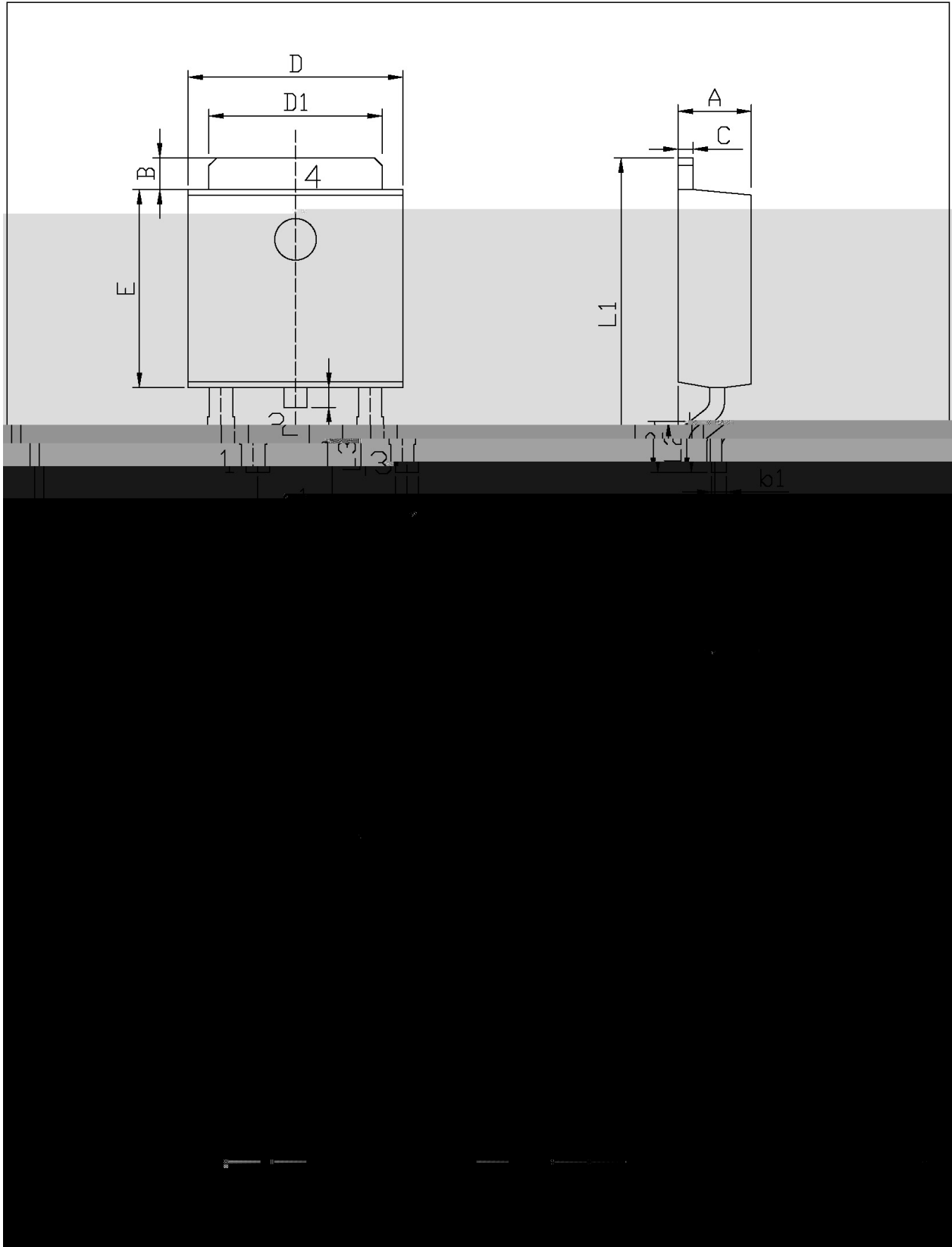
Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	400	V
Collector to Emitter Voltage	V_{CEO}	400	V
Emitter to Base Voltage	V_{EBO}	5.0	V
Collector Current - Continuous	I_C	200	mA
Collector Current – Continuous(Pulse)	I_{CP}	400	mA
Collector Power Dissipation	P_C	1.0	W
Collector Power Dissipation	$P_C(T_c=25^{\circ}C)$	10	W
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55~150	

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	$I_C=10\mu A$ $I_E=0$	400			V
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C=1.0mA$ $R_{BE}=\infty$	400			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}	$V_{CB}=300V$ $I_E=0$			0.1	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=4.0V$ $I_C=0$			0.1	μA
DC Current Gain	h_{FE}	$V_{CE}=10V$ $I_C=50mA$	60		200	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=50mA$ $I_B=5.0mA$			0.6	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=50mA$ $I_B=5.0mA$			1.0	V
Transition Frequency	f_T	$V_{CE}=30V$ $I_C=10mA$		70		MHz
Collector output capacitance	C_{ob}	$V_{CB}=30V$ $f=1.0MHz$		4.0		pF
Reverse Transfer Capacitance	C_{re}	$V_{CB}=30V$ $f=1.0MHz$		3.0		pF
Turn-On Time	t_{on}	$10I_{EX} \rightarrow 10I_{BE} \rightarrow I_C=50mA$		0.25		μs

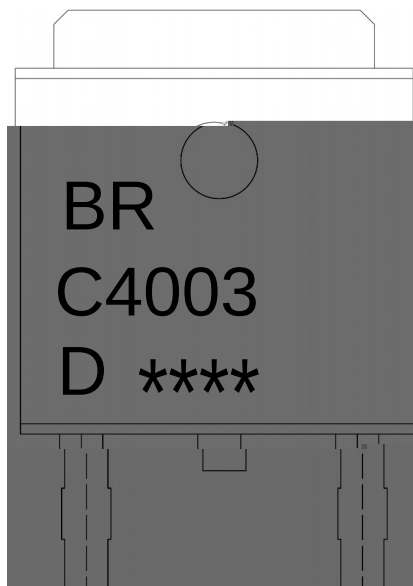
/ Electrical Characteristic Curve



/ Package Dimensions



/ Marking Instructions



BR

C4003

D: h_{FE}

Note:

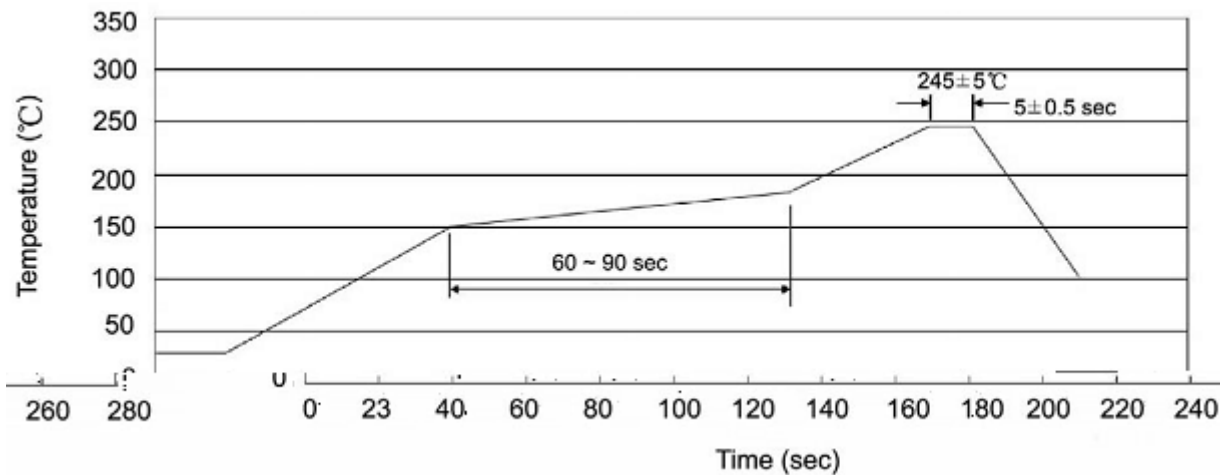
BR: Company Code

C4003: Product Type.

D: h_{FE} Classifications Symbol

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

() /



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

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

/ Packaging SPEC.

/ REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
TO-252	2,500	2	5,000	5	25,000	13" ×16	360×360×50	385×257×392

/ 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-251/252	75	48	3,600	5	18,000	526×20.5×5.25	555×164×50	575×290×180

/ Notices