

/ Descriptions

WR0<5 QSQ Silicon NPN transistor in a TO-92 Plastic Package.

/ Features

High transition frequency f_T .

/ Applications

Optimum for RF amplification of FM/AM radios

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Collector PIN 3 Emitter

/ hFE Classifications & Marking

h_{FE} Classifications Symbol	B	C	D
h_{FE} Range	40~110	65~160	100~260

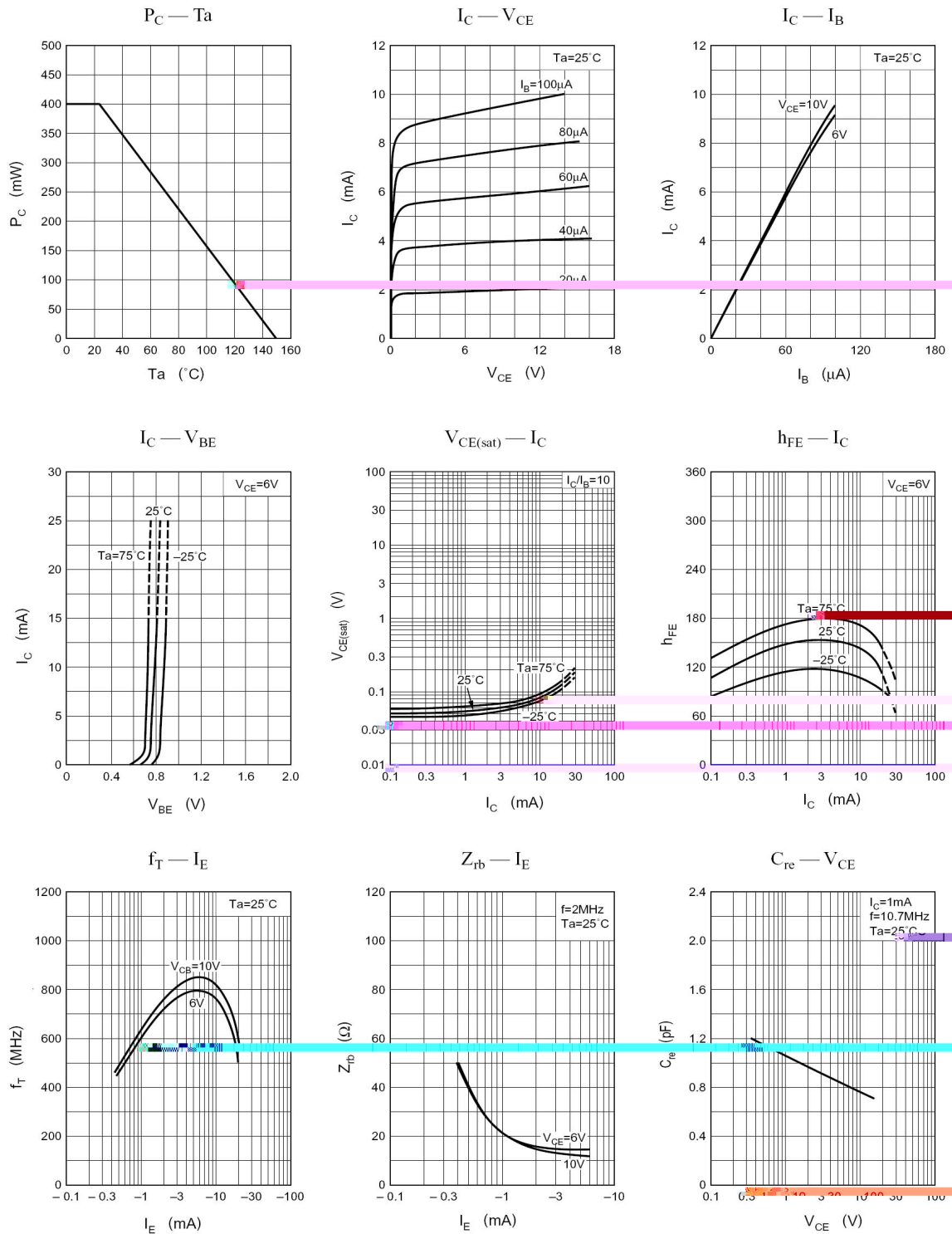
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	30	V
Collector to Emitter Voltage	V_{CEO}	20	V
Emitter to Base Voltage	V_{EBO}	3	V
Collector Current - Continuous	I_C	20	mA
Collector Power Dissipation	P_C	400	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55~150	°C

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	$I_C=10\mu A$ $I_E=0$	30			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E=10\mu A$ $I_C=0$	3			V
DC Current Gain	h_{FE}	$V_{CB}=6V$ $I_C=1.0mA$	40		260	
Base to Emitter Voltage	V_{BE}	$V_{CB}=6V$ $I_C=1.0mA$		0.72		V
Transition Frequency	f_T	$V_{CB}=6V$ $I_E=-1mA$ $f=200MHz$	450	650		MHz
Common Emitter Reverse Transfer Capacitance	C_{re}	$V_{CE}=6V$ $I_C=1mA$ $f=10.7MHz$		0.8	1	pF
Noise Figure	NF	$V_{CB}=6V$ $I_E=-1mA$ $f=100MHz$		3.5	5	dB
Power Gain	PG	$V_{CB}=6V$ $I_E=-1mA$ $f=100MHz$	20			dB

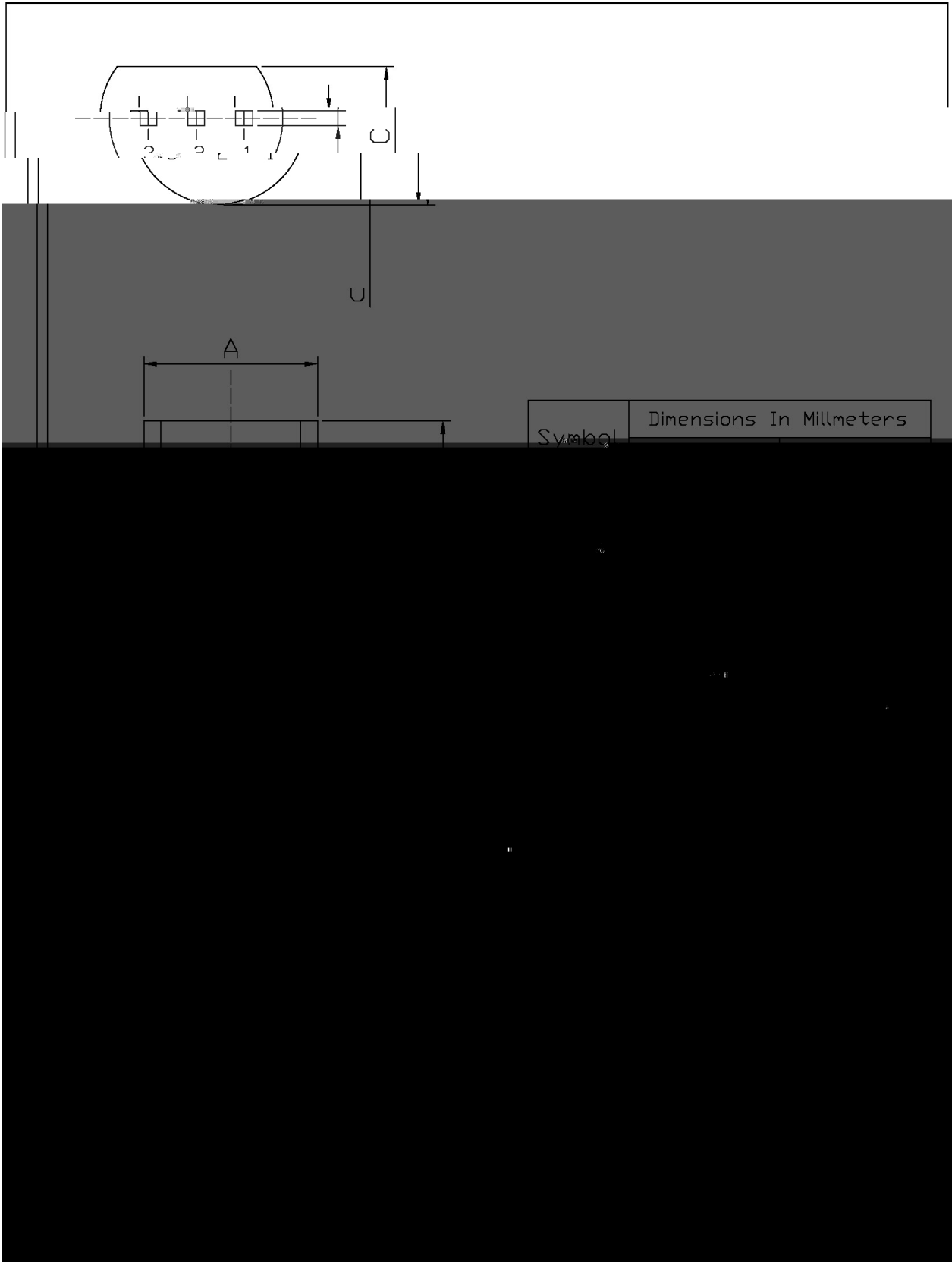
/ Electrical Characteristic Curve



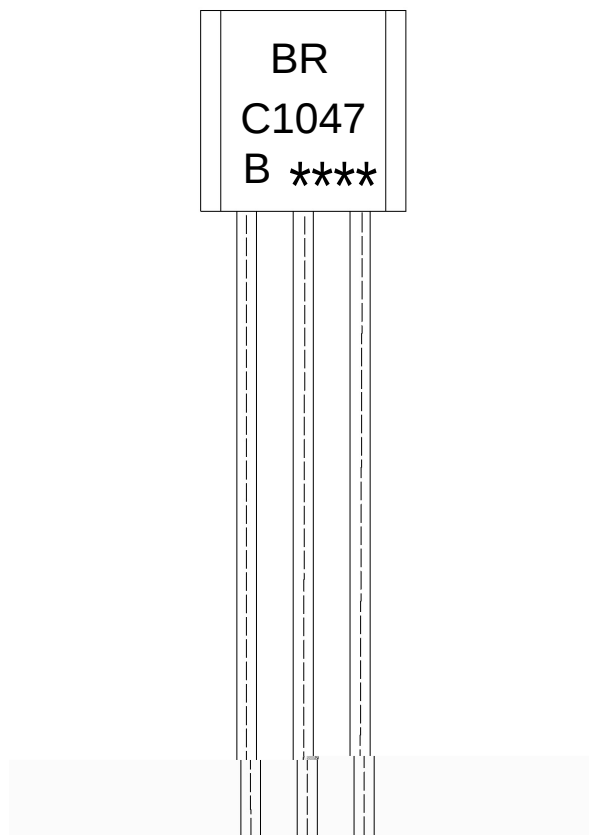
/ Package Dimensions

TO-92

Unit: mm



/ Marking Instructions



EU:

F437:

E: h_{FE}

Note:

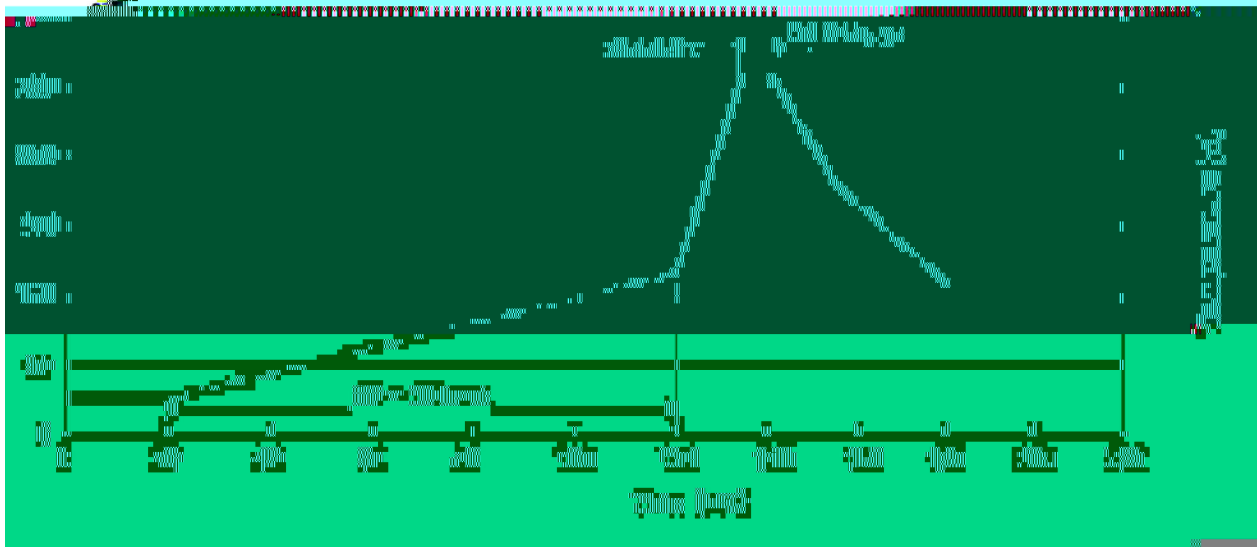
BR: Company Code.

C1047: Product Type.

B: 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	Units					Dimension (unit mm3)		
	Units/Bag /	Bags/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Bag	Inner Box	Outer Box
TO-92	1,000	10	10,000	5	50,000	135×190	237×172×102	560×245×195
	1,000	10	10,000	10	100,000	135×190	237×172×102	560×245×375

/ AMMO

Package Type	Units					Dimension (unit mm3)	
	Units/tape /	Tape/Inner Box /	Rows/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Inner Box	Outer Box
TO-92	3,000	1	120	10	30,000	328×230×42	480×346×235 547×407×268

/ Notices