

Transistors

# General purpose transistor (isolated dual transistors)

## IMX25

●Features

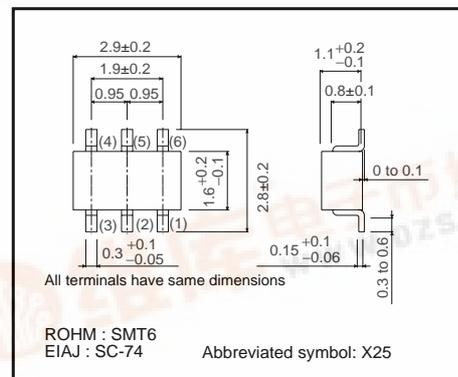
- 1) Two 2SD2704K chips in a SMT package.
- 2) Mounting possible with SMT3 automatic mounting machine.
- 3) Transistor elements are independent, eliminating interference.
- 4) Mounting cost and area can be cut in half.

●Structure

Epitaxial planar type  
NPN silicon transistor

The following characteristics apply to both Tr<sub>1</sub> and Tr<sub>2</sub>.

●External dimensions (Unit : mm)

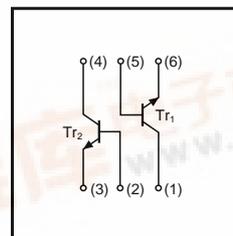


●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V <sub>CB0</sub>	50	V
Collector-emitter voltage	V <sub>CE0</sub>	20	V
Emitter-base voltage	V <sub>EB0</sub>	25	V
Collector current	I <sub>c</sub>	300	mA
Power dissipation	P <sub>d</sub>	300(TOTAL)	mW *
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C

\* 200mW per element must not be exceeded.

●Equivalent circuit



●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV <sub>CB0</sub>	50	-	-	V	I <sub>c</sub> =10μA
Collector-emitter breakdown voltage	BV <sub>CE0</sub>	20	-	-	V	I <sub>c</sub> =1mA
Emitter-base breakdown voltage	BV <sub>EB0</sub>	25	-	-	V	I <sub>E</sub> =10μA
Collector cutoff current	I <sub>cBO</sub>	-	-	0.1	μA	V <sub>CB</sub> =50V
Emitter cutoff current	I <sub>EBO</sub>	-	-	0.1	μA	V <sub>EB</sub> =25V
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	-	50	100	V	I <sub>c</sub> /I <sub>B</sub> =30mA/3mA
DC current transfer ratio	h <sub>FE</sub>	820	-	2700	-	V <sub>CE</sub> =2V, I <sub>c</sub> =4mA
Transition frequency	f <sub>r</sub>	-	35	-	MHz	V <sub>CE</sub> =6V, I <sub>E</sub> =-4mA, f=10MHz
Output capacitance	C <sub>ob</sub>	-	3.9	-	pF	V <sub>CB</sub> =10V, I <sub>E</sub> =0A, f=1MHz
Output On-resistance	R <sub>on</sub>	-	0.7	-	Ω	I <sub>B</sub> =5mA, V <sub>i</sub> =100mVrms, f=1kHz

Transistors

●Packaging specifications

Part No.	Packaging type	Taping
	Code	T110
	Basic ordering unit (pieces)	3000
IMX25		○

●Electrical characteristic curves

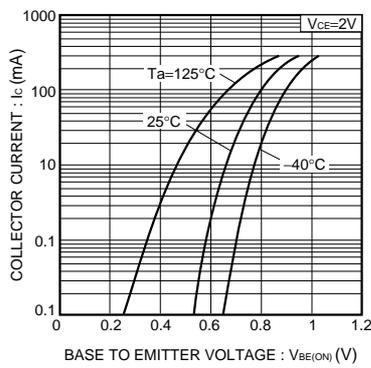


Fig.1 Grounded emitter propagation characteristics ( I )

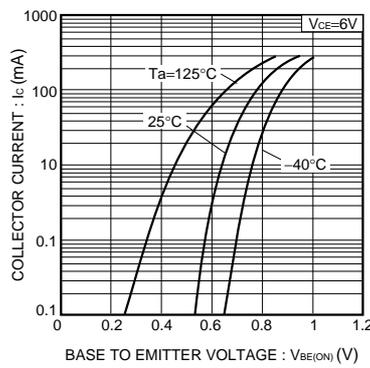


Fig.2 Grounded emitter propagation characteristics ( II )

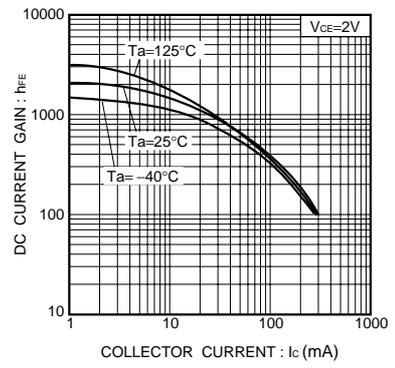


Fig.3 DC current gain vs. collector current ( I )

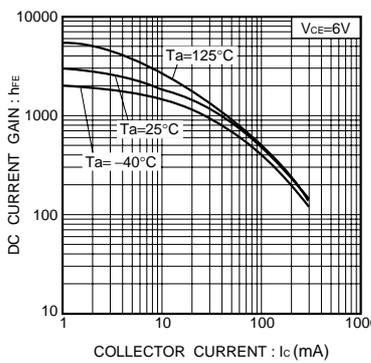


Fig.4 DC current gain vs. collector current ( II )

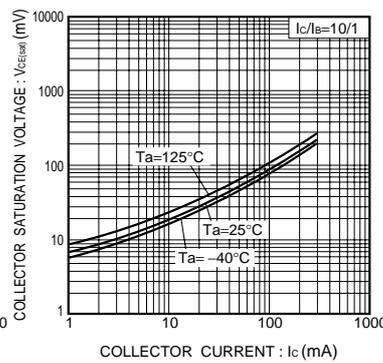


Fig.5 Collector-emitter saturation voltage vs. collector current ( I )

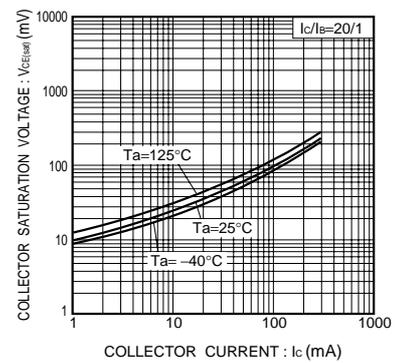


Fig.6 Collector-emitter saturation voltage vs. collector current ( II )

Transistors

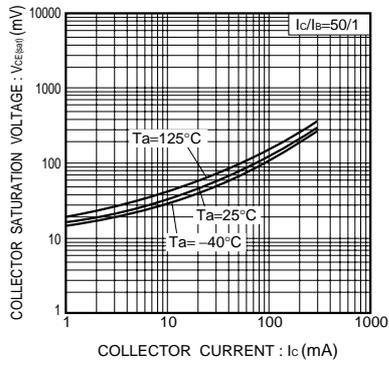


Fig.7 Collector-emitter saturation voltage vs. collector current (III)

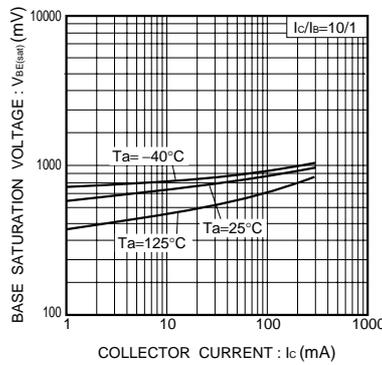


Fig.8 Base-emitter saturation voltage vs. collector current (I)

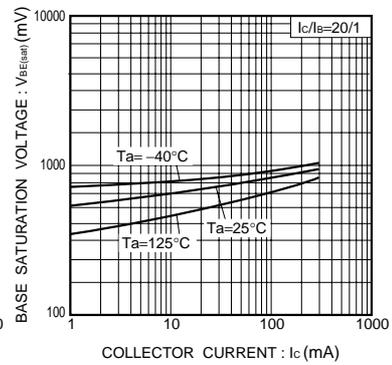


Fig.9 Base-emitter saturation voltage vs. collector current (II)

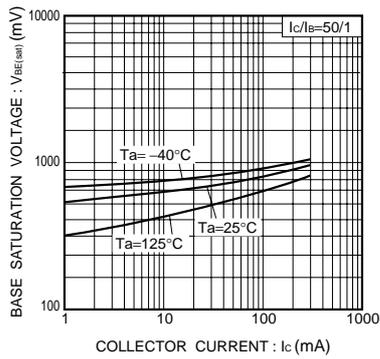


Fig.10 Base-emitter saturation voltage vs. collector current (III)

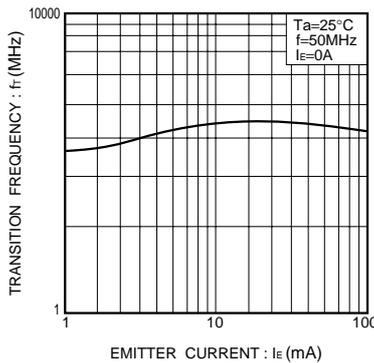


Fig.11 Gain bandwidth product vs. emitter current

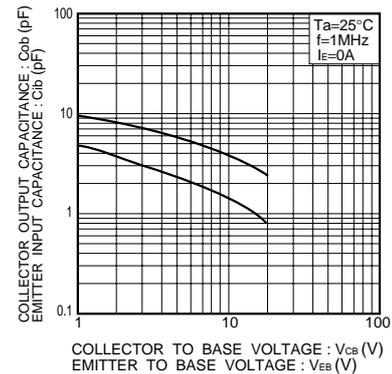


Fig.12 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage

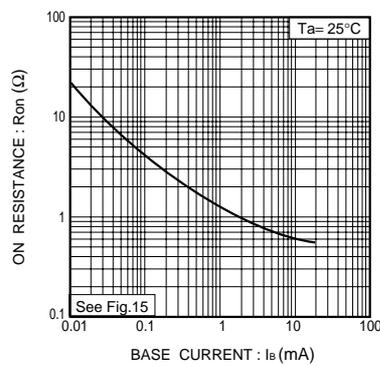


Fig.13 Output-on resistance vs. base current (I)

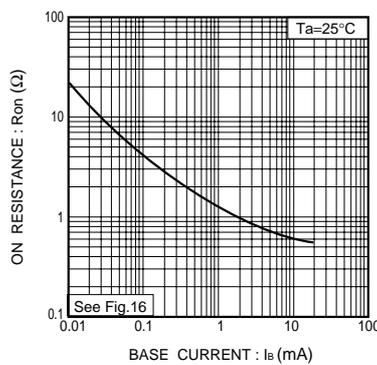


Fig.14 Output-on resistance vs. base current (II)

## Transistors

## ●Ron measurement circuit

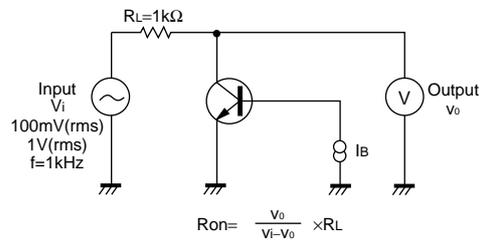


Fig.15 Ron measurement circuit (I)

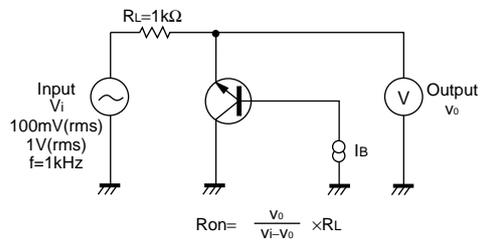


Fig.16 Ron measurement circuit (II)

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