General purpose transistor (isolated dual transistors)

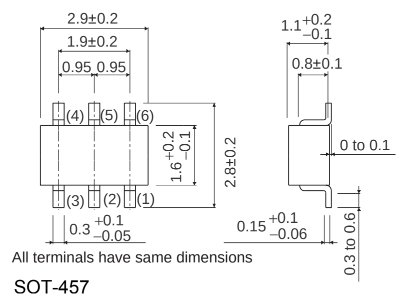
IMX25

●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_1 and Tr_2.

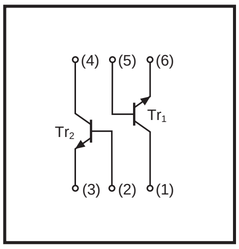
●Dimensions (Unit : mm)



SOT-457
ROHM : SMT6
EIAJ : SC-74

Abbreviated symbol: X25

●Inner circuit



●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	50	V
Collector-emitter voltage	V_{CEO}	20	V
Emitter-base voltage	V_{EBO}	25	V
Collector current	I_C	300	mA
Power dissipation	Pd	300(TOTAL)	mW ✻
Junction temperature	Tj	150	°C
Storage temperature	Tstg	−55 to +150	°C

✻ 200mW per element must not be exceeded.

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	50	–	–	V	I_C=10μA
Collector-emitter breakdown voltage	BV_{CEO}	20	–	–	V	I_C=1mA
Emitter-base breakdown voltage	BV_{EBO}	25	–	–	V	I_E=10μA
Collector cutoff current	I_{CBO}	–	–	0.1	μA	V_{CB}=50V
Emitter cutoff current	I_{EBO}	–	–	0.1	μA	V_{EB}=25V
Collector-emitter saturation voltage	$V_{CE(sat)}$	–	50	100	mV	I_C/I_B=30mA/3mA
DC current transfer ratio	h_{FE}	820	–	2700	–	V_{CE}=2V, I_C=4mA
Transition frequency	f_T	–	35	–	MHz	V_{CE}=6V, I_E=−4mA, f=10MHz
Output capacitance	Cob	–	3.9	–	pF	V_{CB}=10V, I_E=0A, f=1MHz
Output On-resistance	Ron	–	0.7	–	Ω	I_B=5mA, V_i=100mVrms, f=1kHz

●Packaging specifications

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

●Electrical characteristic curves

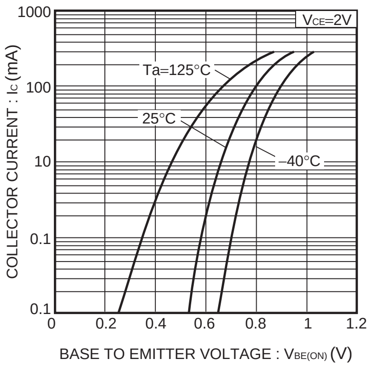


Fig.1 Grounded emitter propagation characteristics (I)

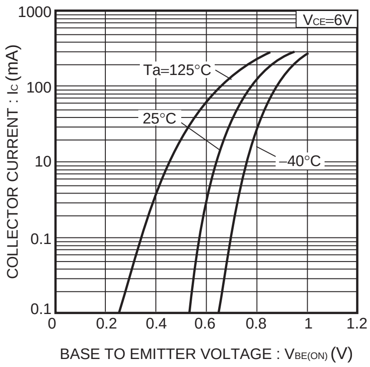


Fig.2 Grounded emitter propagation characteristics (II)

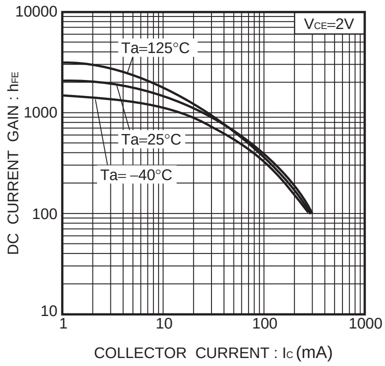


Fig.3 DC current gain vs. collector current (I)

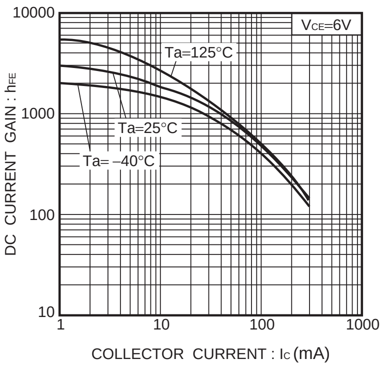


Fig.4 DC current gain vs. collector current (II)

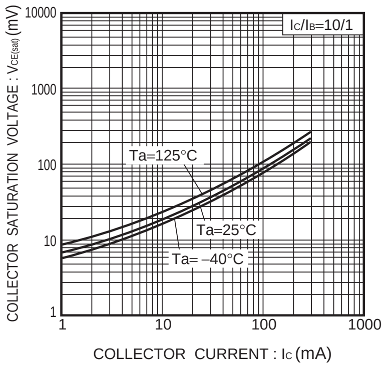


Fig.5 Collector-emitter saturation voltage vs. collector current (I)

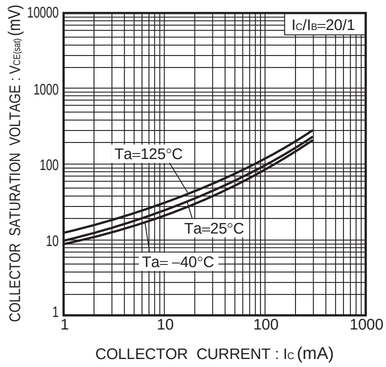


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

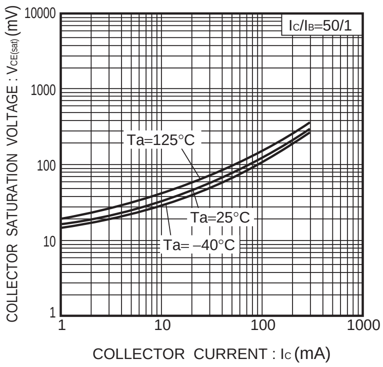


Fig.7 Collector-emitter saturation voltage vs. collector current (III)

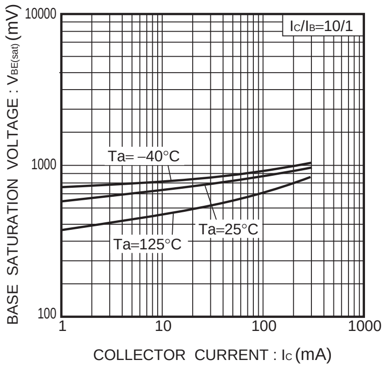


Fig.8 Base-emitter saturation voltage vs. collector current (I)

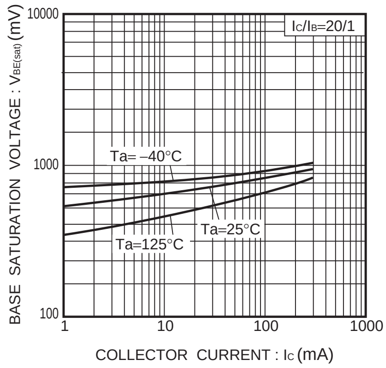


Fig.9 Base-emitter saturation voltage vs. collector current (II)

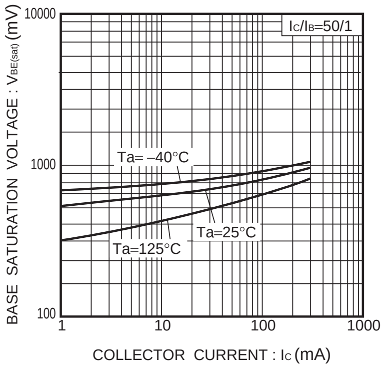


Fig.10 Base-emitter saturation voltage vs. collector current (III)

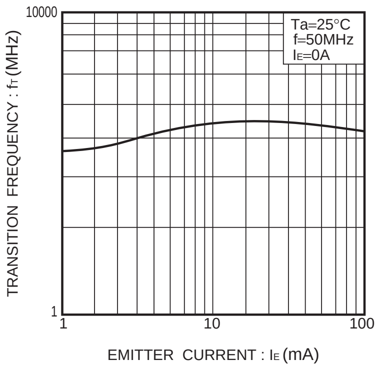


Fig.11 Gain bandwidth product vs. emitter current

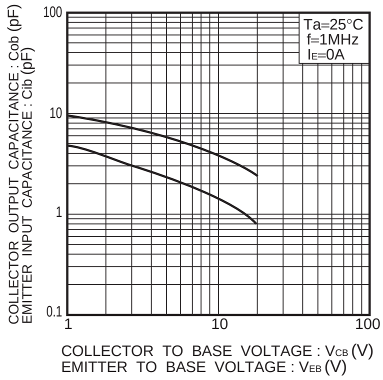


Fig.12 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

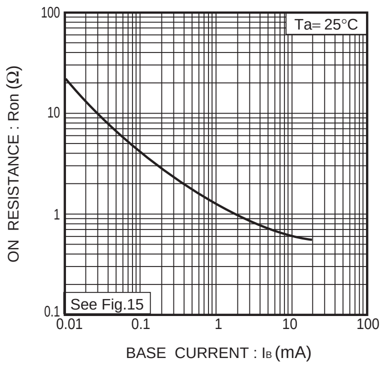


Fig.13 Output-on resistance vs. base current (I)

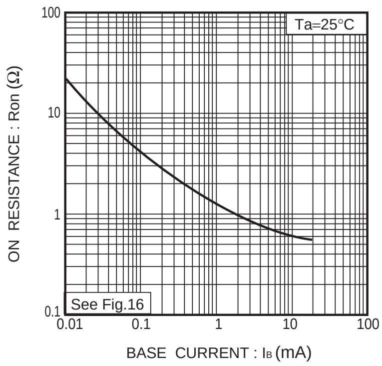


Fig.14 Output-on resistance vs. base current (II)

●Ron measurement circuit

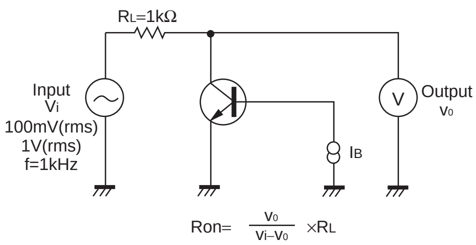


Fig.15 Ron measurement circuit (I)

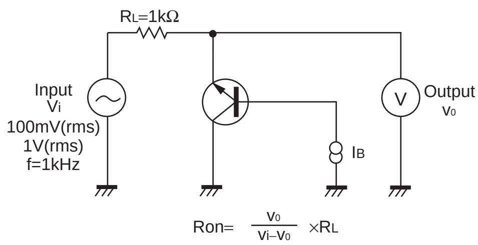


Fig.16 Ron measurement circuit (II)

This product might cause chip aging and breakdown under the large electrified environment.
Please consider to design ESD protection circuit.

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