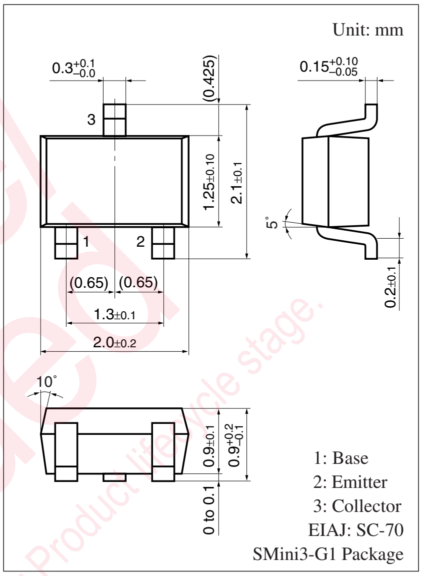
UNR5225/5226/5227

Silicon NPN epitaxial planar type

For muting



■ Features

- Low collector-emitter saturation voltage $V_{CE(sat)}$, optimum for the muting circuit
- The use with high current value is possible

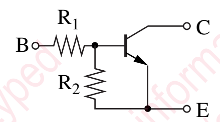
■ Resistance by Part Number

	Marking symbol	(R_1)	(R_2)
• UNR5225	FZ	10 kΩ	—
• UNR5226	FY	4.7 kΩ	—
• UNR5227	FW	6.8 kΩ	6.8 kΩ

■ Absolute Maximum Ratings $T_a = 25°C$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	30	V
Collector-emitter voltage (Base open)	V_{CEO}	20	V
Emitter-base voltage (Collector open)	V_{EBO}	5	V
Collector current	I_C	600	mA
Total power dissipation	P_T	150	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

Internal Connection



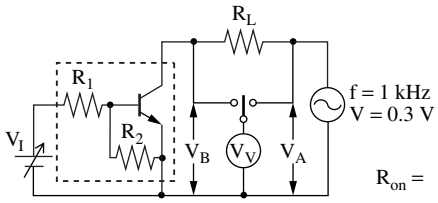
■ Electrical Characteristics $T_a = 25°C \pm 3°C$

Parameter		Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)		V_{CBO}	$I_C = 1\ \mu A$, $I_E = 0$	30			V
Collector-emitter voltage (Base open)		V_{CEO}	$I_C = 1$ mA, $I_B = 0$	20			V
Emitter-base voltage (Collector open)		V_{EBO}	$I_E = 1\ \mu A$, $I_C = 0$	5			V
Collector-base cutoff current (Emitter open)		I_{CBO}	$V_{CB} = 30$ V, $I_E = 0$			1	μA
Emitter-base cutoff current (Collector open)		I_{EBO}	$V_{EB} = 5$ V, $I_C = 0$			1	μA
Forward current transfer ratio	UNR5227	h_{FE}	$V_{CE} = 5$ V, $I_C = 50$ mA	70			—
	UNR5225/5226			100		600	
Collector-emitter saturation voltage		$V_{CE(sat)}$	$I_C = 50$ mA, $I_B = 2.5$ mA			80	mV
Input resistance	UNR5226	R_1		−30%	4.7	+30%	kΩ
	UNR5227				6.8		
	UNR5225				10		
Resistance ratio	UNR5227	R_1/R_2		0.8	1.0	1.2	—
ON resistance *	UNR5226	R_{on}	$V_I = 7$ V, $R_L = 1$ kΩ, f = 1 kHz		0.95		Ω
	UNR5227				1.1		
	UNR5225				1.5		
Transition frequency		f_T	$V_{CB} = 10$ V, $I_E = -50$ mA, f = 200 MHz		200		MHz

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.
2. *: Refer to R_{on} measurement circuit

■ Electrical Characteristics (continued) $T_a = 25°C \pm 3°C$

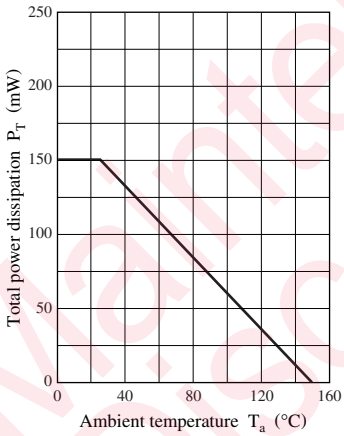
• R_{on} measurement circuit



$$R_{on} = \frac{V_B}{V_A - V_B} \times R_L\ (\Omega)$$

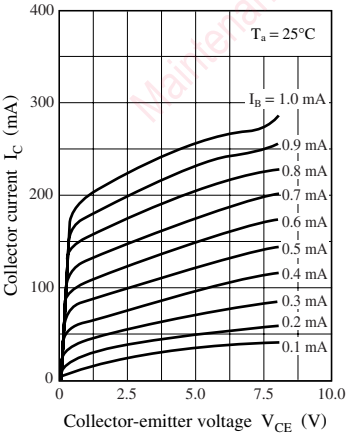
Common characteristics chart

P_T — T_a

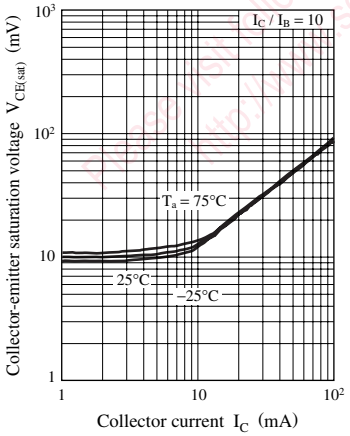


Characteristics charts of UNR5225

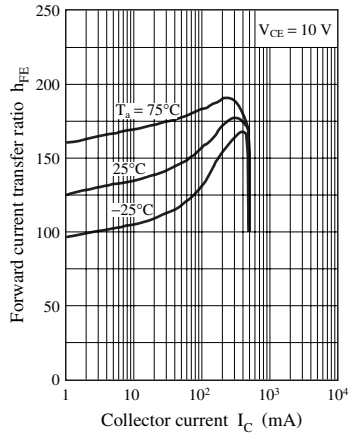
I_C — V_{CE}



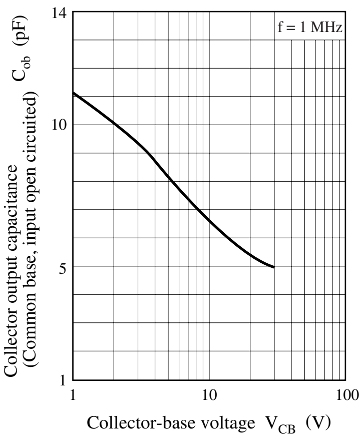
$V_{CE(sat)}$ — I_C



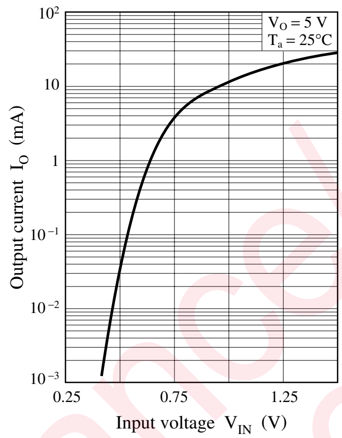
h_{FE} — I_C



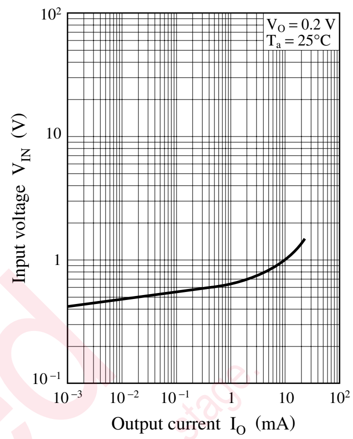
C_{ob} — V_{CB}



I_O — V_{IN}

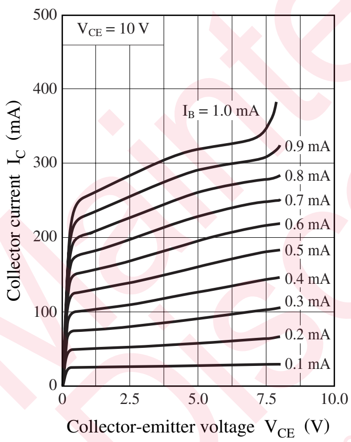


V_{IN} — I_O

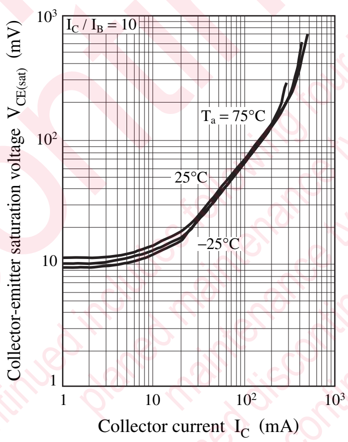


Characteristics charts of UNR5226

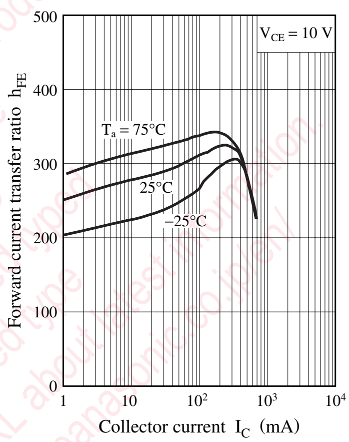
I_C — V_{CE}



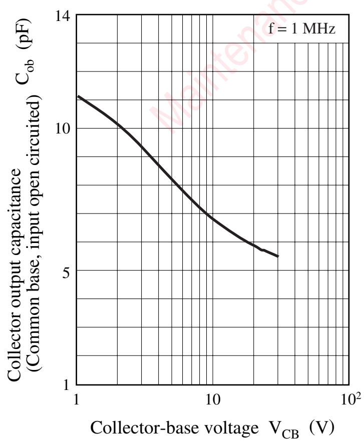
$V_{CE(sat)}$ — I_C



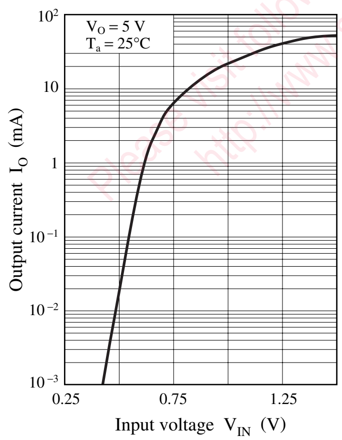
h_{FE} — I_C



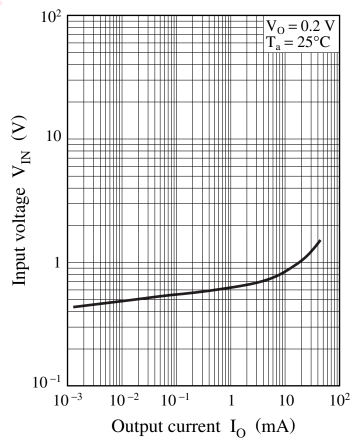
C_{ob} — V_{CB}



I_O — V_{IN}

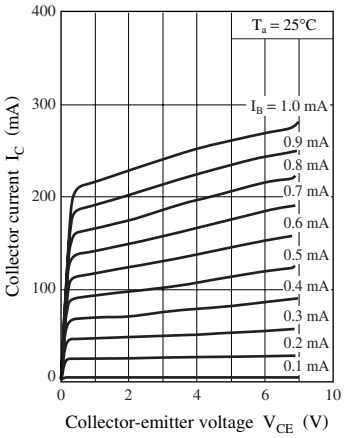


V_{IN} — I_O

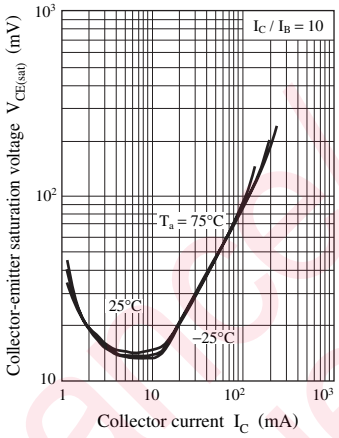


Characteristics charts of UNR5227

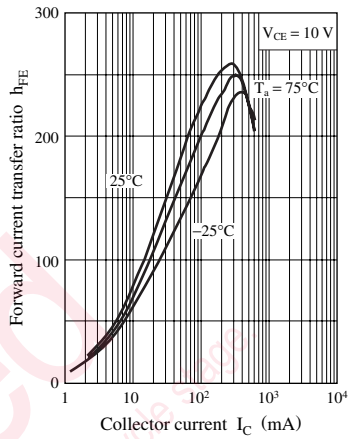
I_C — V_{CE}



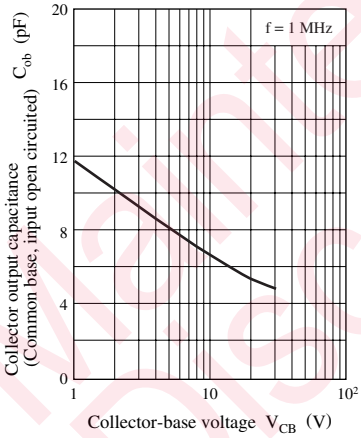
$V_{CE(sat)}$ — I_C



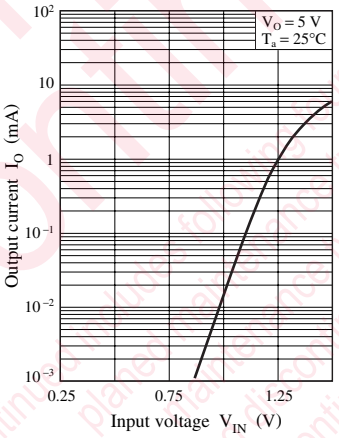
h_{FE} — I_C



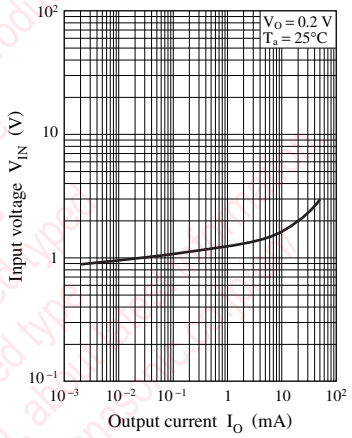
C_{ob} — V_{CB}



I_O — V_{IN}



V_{IN} — I_O



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