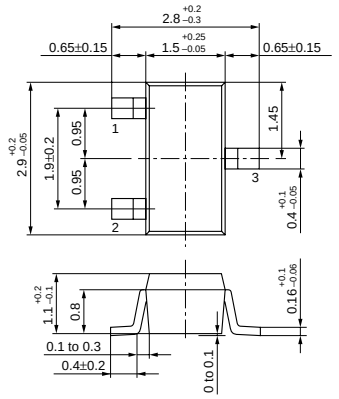
2SC3829

Silicon NPN epitaxial planer type

For UHF band low-noise amplification

Unit: mm



1:Base JEDEC:TO–236
2:Emitter EIAJ:SC–59
3:Collector Mini Type Package

Marking symbol : 3M

Features

- Low noise figure NF.
- High gain.
- High transition frequency f_T.
- Mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing.

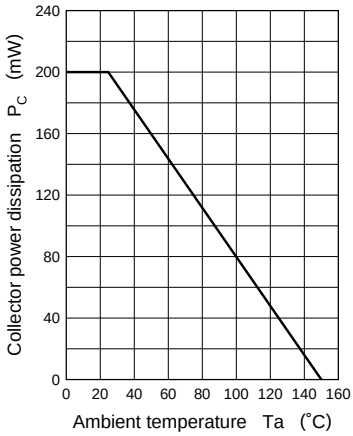
Absolute Maximum Ratings (Ta=25˚C)

Parameter	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	15	V
Collector to emitter voltage	V_{CEO}	10	V
Emitter to base voltage	V_{EBO}	2	V
Collector current	I_C	80	mA
Collector power dissipation	P_C	200	mW
Junction temperature	T_j	150	˚C
Storage temperature	T_{stg}	–55 ~ +150	˚C

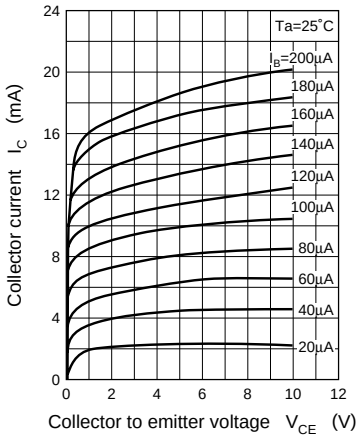
Electrical Characteristics (Ta=25˚C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	V_{CB} = 10V, I_E = 0			1	µA
Emitter cutoff current	I_{EBO}	V_{EB} = 2V, I_C = 0			1	µA
Collector to base voltage	V_{CBO}	I_C = 10µA, I_E = 0	15			V
Collector to emitter voltage	V_{CEO}	I_C = 100µA, I_B = 0	10			V
Forward current transfer ratio	h_{FE}	V_{CE} = 8V, I_C = 20mA	50	150	300	
Transition frequency	f_T	V_{CE} = 8V, I_C = 20mA, f = 800MHz	5	6		GHz
Collector output capacitance	C_{ob}	V_{CB} = 10V, I_E = 0, f = 1MHz		0.7	1.2	pF
Foward transfer gain	$\|S_{21e}\|^2$	V_{CE} = 8V, I_C = 20mA, f = 800MHz	10	13.5		dB
Maximum unilateral power gain	GUM	V_{CE} = 8V, I_C = 20mA, f = 800MHz		15		dB
Noise figure	NF	V_{CE} = 8V, I_C = 20mA, f = 800MHz			2	dB

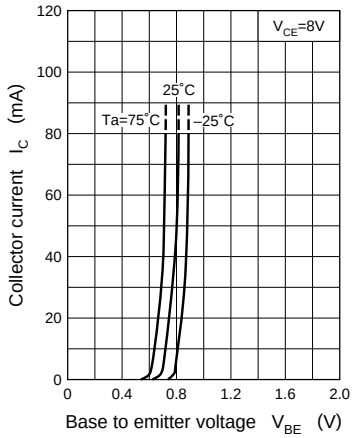
P_C — Ta



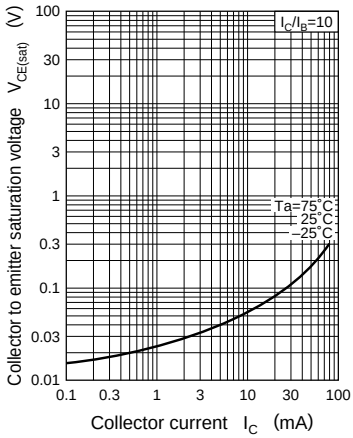
I_C — V_{CE}



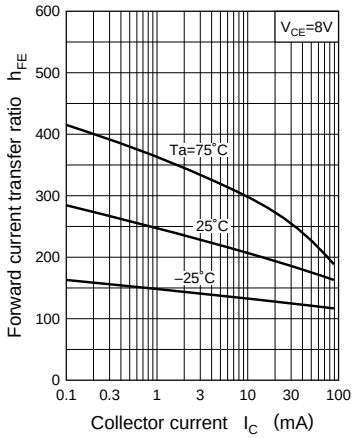
I_C — V_{BE}



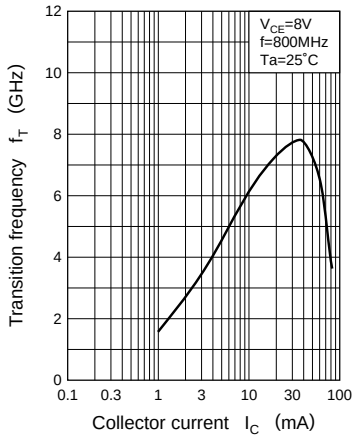
$V_{CE(sat)}$ — I_C



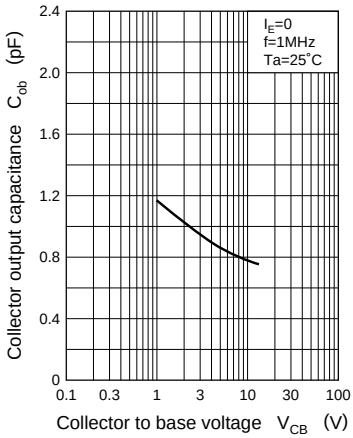
h_{FE} — I_C



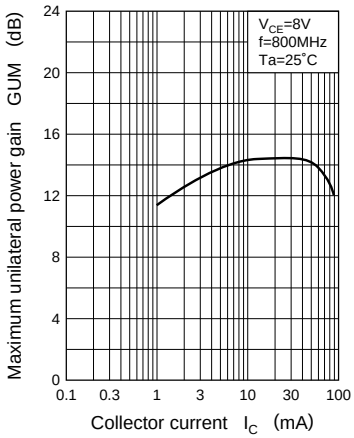
f_T — I_C



C_{ob} — V_{CB}



GUM — I_C



NF — I_C