

# 2SD601A

## Silicon NPN epitaxial planer type

For general amplification  
Complementary to 2SB709A

### ■ Features

- High forward current transfer ratio  $h_{FE}$ .
- Low collector to emitter saturation voltage  $V_{CE(sat)}$ .
- 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)

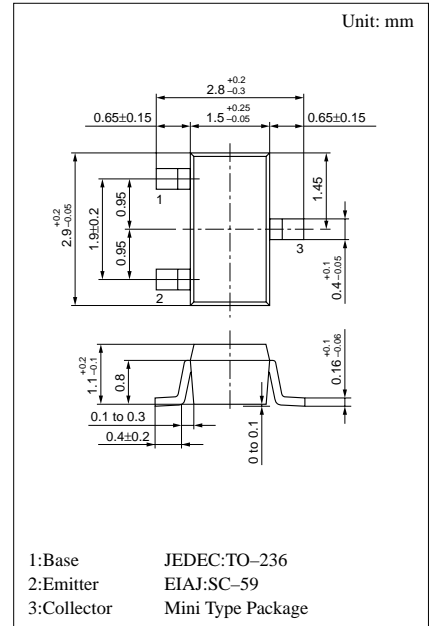
Parameter	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	60	V
Collector to emitter voltage	$V_{CEO}$	50	V
Emitter to base voltage	$V_{EBO}$	7	V
Peak collector current	$I_{CP}$	200	mA
Collector current	$I_C$	100	mA
Collector power dissipation	$P_C$	200	mW
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 ~ +150	°C

### ■ Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = 20V, I_E = 0$			0.1	$\mu A$
	$I_{CEO}$	$V_{CE} = 10V, I_B = 0$			100	$\mu A$
Collector to base voltage	$V_{CBO}$	$I_C = 10\mu A, I_E = 0$	60			V
Collector to emitter voltage	$V_{CEO}$	$I_C = 2mA, I_B = 0$	50			V
Emitter to base voltage	$V_{EBO}$	$I_E = 10\mu A, I_C = 0$	7			V
Forward current transfer ratio	$h_{FE1}^*$	$V_{CE} = 10V, I_C = 2mA$	160		460	
	$h_{FE2}$	$V_{CE} = 2V, I_C = 100mA$	90			
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 100mA, I_B = 10mA$		0.1	0.3	V
Transition frequency	$f_T$	$V_{CB} = 10V, I_E = -2mA, f = 200MHz$		150		MHz
Noise voltage	NV	$V_{CE} = 10V, I_C = 1mA, G_v = 80dB$ $R_g = 100k\Omega, \text{Function} = \text{FLAT}$		110		mV
Collector output capacitance	$C_{ob}$	$V_{CB} = 10V, I_E = 0, f = 1MHz$		3.5		pF

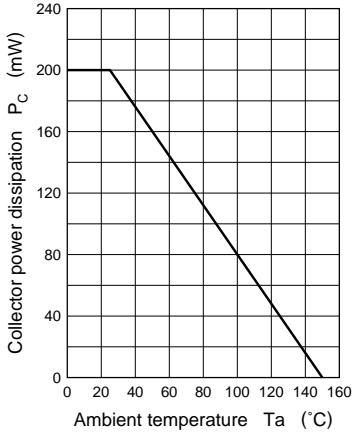
\* $h_{FE1}$  Rank classification

Rank	Q	R	S
$h_{FE1}$	160 ~ 260	210 ~ 340	290 ~ 460
Marking Symbol	ZQ	ZR	ZS

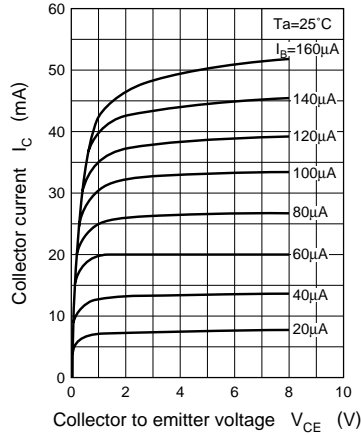


Marking symbol : Z

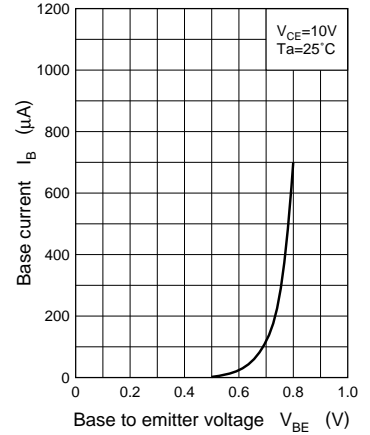
$P_C - T_a$



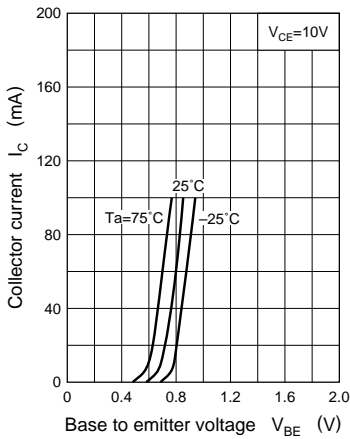
$I_C - V_{CE}$



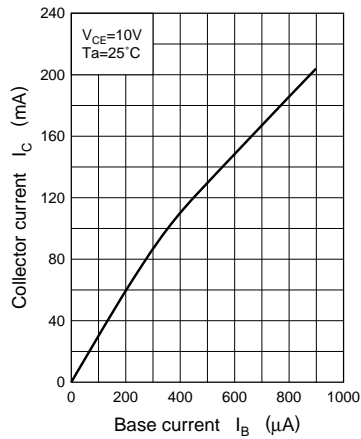
$I_B - V_{BE}$



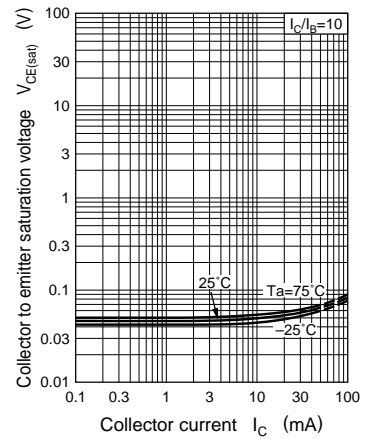
$I_C - V_{BE}$



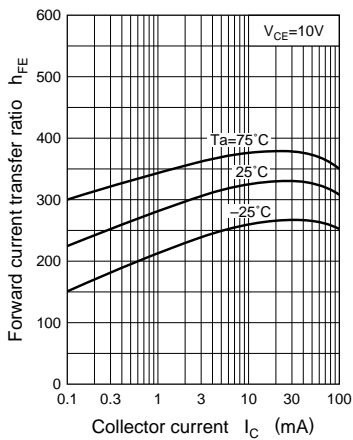
$I_C - I_B$



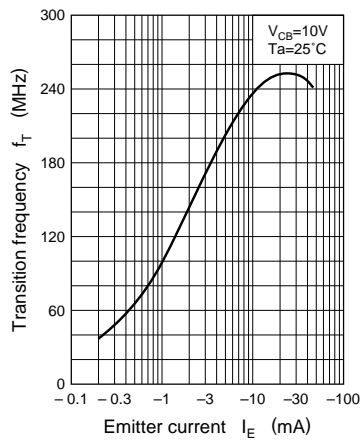
$V_{CE(sat)} - I_C$



$h_{FE} - I_C$



$f_T - I_E$



$NV - I_C$

