

DEVELOPING

2SC5814 , 2SC5815 , 2SC5816 , 2SC5817

For Low Frequency Amplify Application  
Silicon NPN Epitaxial Type

DESCRIPTION

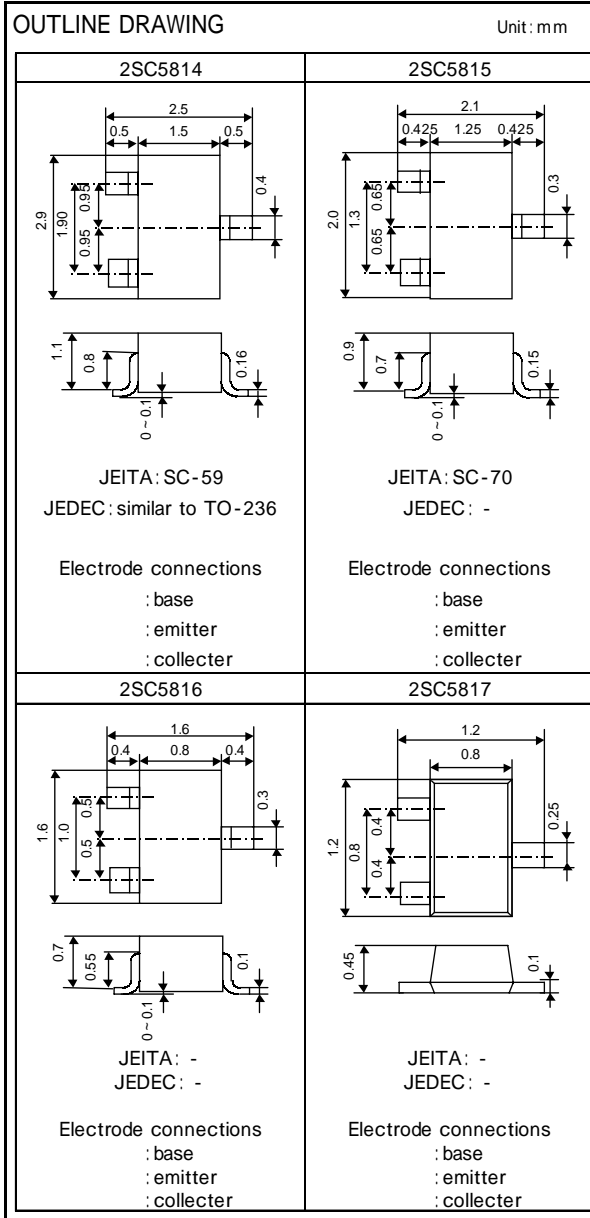
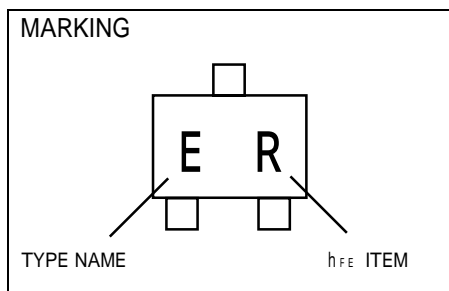
2SC5814 , 2SC5815 , 2SC5816 , 2SC5817 is a super mini package silicon NPN epitaxial type transistor. It is designed for low frequency voltage amplify application.

FEATURE

- Facilitates miniaturization and high-density mounting
- Excellent linearity of DC forward current gain
- Low collector to emitter saturation voltage
- $V_{CE(sat)}=0.3V$  max (@ $I_C=30mA, I_B=1.5mA$ )

APPLICATION

For hybrid IC , small type machine low frequency voltage amplify application



MAXIMUM RATINGS (Ta=25 )

SYMBOL	PARAMETER	RATINGS				UNIT
		2SC5814	2SC5815	2SC5816	2SC5817	
$V_{CBO}$	Collector to Base voltage	60				V
$V_{EBO}$	Emitter to Base voltage	6				V
$V_{CEO}$	Collector to Emitter voltage	60				V
$I_C$	Collector current	125				mA
$P_C$	Collector dissipation	150		125	100	mW
$T_j$	Junction temperature	+ 125				
$T_{stg}$	Storage temperature	-55 ~ + 125				

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## ELECTRICAL CHARACTERISTICS (Ta=25 )

SYMBOL	PARAMETER	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
$V_{(BR)CEO}$	C to E break down voltage	$I_C=100\mu A, R_{BE}=\infty$	60			V
$I_{CBO}$	Collector cut off current	$V_{CB}=60V, I_E=0mA$			0.5	$\mu A$
$I_{EBO}$	Emitter cut off current	$V_{EB}=4V, I_C=0mA$			0.5	$\mu A$
$h_{FE}^*$	DC forward current gain	$V_{CE}=6V, I_C=1mA$	120		560	-
$h_{FE}$	DC forward current gain	$V_{CE}=6V, I_C=0.1mA$	70			-
$V_{CE(sat)}$	C to E saturation voltage	$I_C=30mA, I_B=1.5mA$			0.3	V
$f_T$	Gain band width product	$V_{CE}=6V, I_E=-10mA$		200		MHz
Cob	Collector output capacitance	$V_{CB}=6V, I_E=0mA, f=1MHz$		1.5		pF

\* It shows  $h_{FE}$  classification in right table.

Item	Q	R	S
$h_{FE}$	120 ~ 270	180 ~ 390	270 ~ 560
Marking	EQ	ER	ES

Item	E	F
$h_{FE}$	150 ~ 300	250 ~ 500
Marking	EE	EF

**ISAHAYA ELECTRONICS CORPORATION**

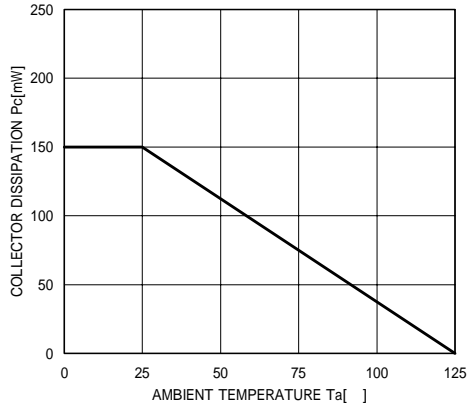
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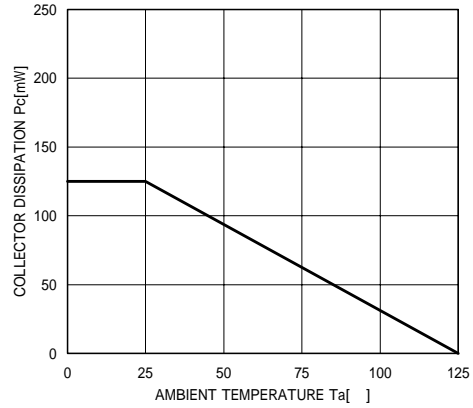
2SC5814 2SC5815

COLLECTOR DISSIPATION VS.  
AMBIENT TEMPERATURE



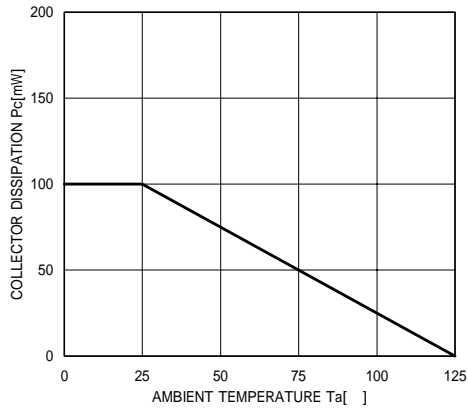
2SC5816

COLLECTOR DISSIPATION VS.  
AMBIENT TEMPERATURE



2SC5817

COLLECTOR DISSIPATION VS.  
AMBIENT TEMPERATURE

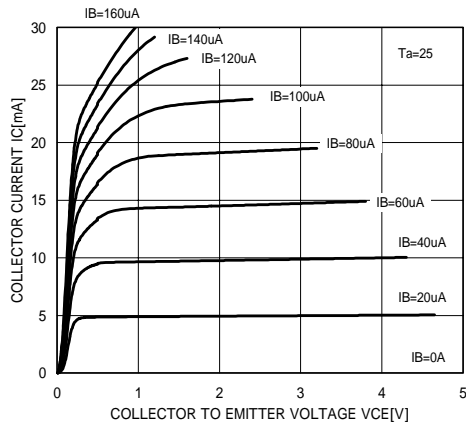


DEVELOPING

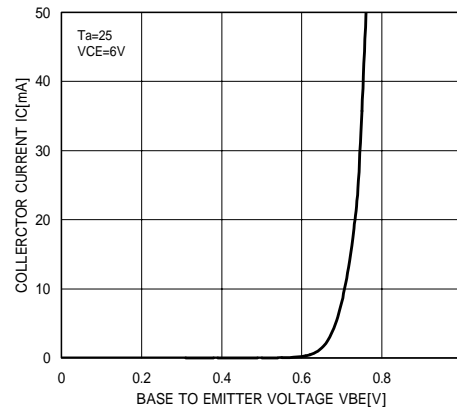
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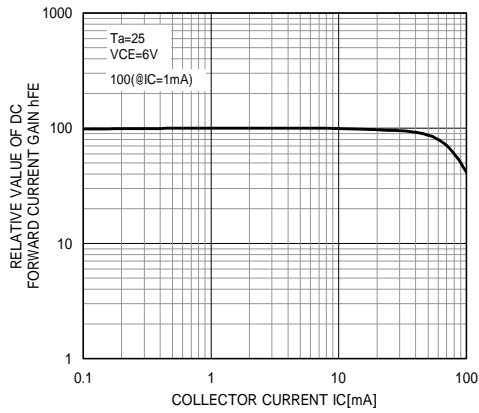
COMMON EMITTER OUTPUT



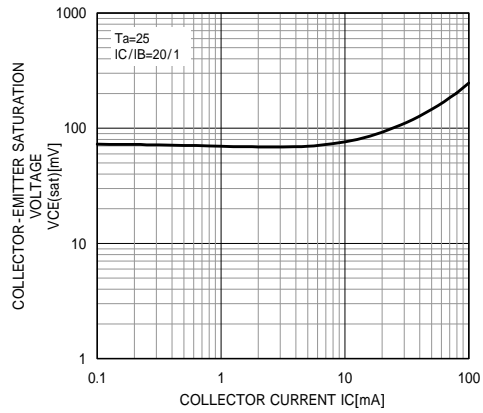
COMMON EMITTER TRANSFER



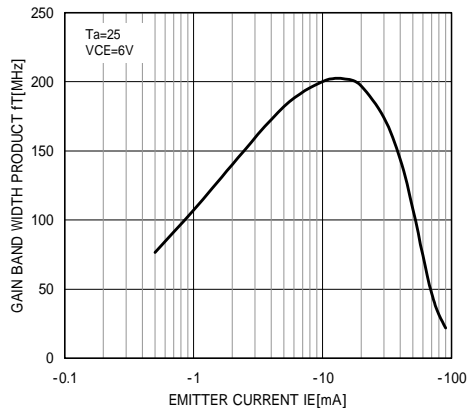
DC FORWARD CURRENT GAIN VS. COLLECTOR CURRENT



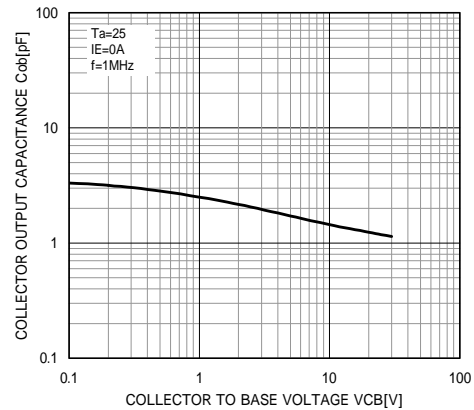
COLLECTOR-EMITTER SATURATION VOLTAGE VS COLLECTOR CURRENT



GAIN BAND WIDTH PRODUCT VS. EMITTER CURRENT



COLLECTOR OUTPUT CAPACITANCE VS. COLLECTOR TO BASE VOLTAGE





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