

### Transistor

#### Silicon PNP Epitaxial Type

#### For General Purpose Switching and Amplifier Applications

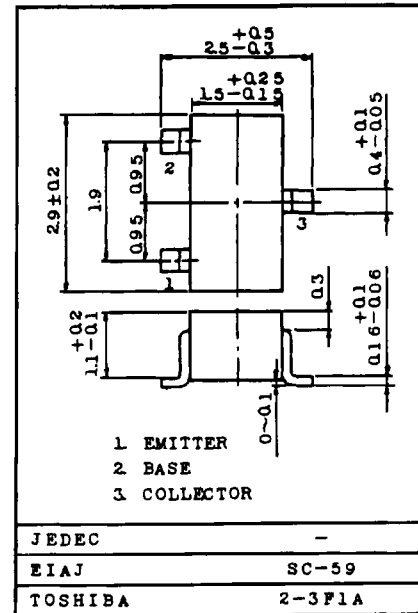
#### Features

- Low Leakage Current
  - $I_{CEV} = -50\text{nA (Max.)}$ ,  $I_{BEV} = 50\text{nA (Max.)}$
  - @  $V_{CE} = -30\text{V}$ ,  $V_{BE} = -3\text{V}$
- Excellent DC Current Gain Linearity
- Low Saturation Voltage
  - $V_{CE(sat)} = -0.4\text{V (Max.)}$  @  $I_C = -50\text{mA}$ ,  $I_B = 5\text{mA}$
- Low Collector Output Capacitance
  - $C_{ob} = 4.5\text{pF(Max.)}$  @  $V_{CB} = -5\text{V}$
- Complementary to YTS3904

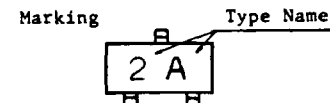
#### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CBO}$	-40	V
Collector-Emitter Voltage	$V_{CEO}$	-40	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Collector Current	$I_C$	-200	mA
Base Current	$I_B$	-50	mA
Collector Power Dissipation ( $T_a = 25^\circ\text{C}$ ) Derate Linearly $25^\circ\text{C}$	$P_C$	200	mW
		1.6	mW/ $^\circ\text{C}$
Thermal Resistance (Junction to Ambient)	$R_{\theta(j-a)}$	625	$^\circ\text{C/W}$
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 - 150	$^\circ\text{C}$

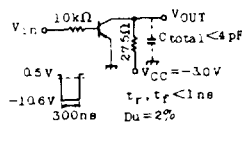
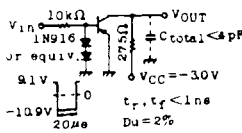
Unit in mm



Weight : 0.012g



## Electrical Characteristics (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	$I_{CEV}$	$V_{CE} = -30V, V_{BE} = 3V$	-	-	-50	nA
Base Cut-off Current	$I_{BEV}$	$V_{CE} = -30V, V_{BE} = -3V$	-	-	50	nA
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu A, I_E = 0$	-40	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1mA, I_B = 0$	-40	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu A, I_C = 0$	-5	-	-	V
DC Current Gain	$h_{FE(1)}$	$V_{CE} = -1V, I_C = -0.1mA$	60	-	-	
	$h_{FE(2)}$	$V_{CE} = -1V, I_C = -1mA$	80	-	-	
	$h_{FE(3)}$	$V_{CE} = -1V, I_C = -10mA$	100	-	300	
	$h_{FE(4)}$	$V_{CE} = -1V, I_C = -50mA$	60	-	-	
	$h_{FE(5)}$	$V_{CE} = -2V, I_C = -100mA$	30	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C = -10mA, I_B = -1mA$	-	-	-0.25	V
	$V_{CE(sat)2}$	$I_C = -50mA, I_B = -5mA$	-	-	-0.4	V
Base-Emitter Saturation Voltage	$V_{BE(sat)1}$	$I_C = -10mA, I_B = -1mA$	-0.65	-	-0.85	V
	$V_{BE(sat)2}$	$I_C = -50mA, I_B = 5mA$	-	-	-0.95	V
Transition Frequency	$f_T$	$V_{CE} = 2.0V, I_C = -10mA, f = 100MHz$	250	-	-	MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB} = -5V, I_E = 0, f = 1MHz$	-	-	4.5	pF
Input Capacitance	$C_{ib}$	$V_{EB} = -0.5V, I_C = 0, f = 1MHz$	-	-	10	pF
Input Impedance	$h_{ic}$	$V_{CE} = -10V, I_C = -1mA, f = 1kHz$	2.0	-	12	k $\Omega$
Voltage Feedback Ratio	$h_{re}$		1.0	-	10	x10 <sup>-4</sup>
Small-Signal Current Gain	$h_{ie}$		100	-	400	
Collector Output Admittance	$h_{oe}$		3.0	-	60	$\mu S$
Noise Figure	NF		$V_{CE} = -5V, I_C = -0.1mA,$ $R_g = 1k\Omega, f = 10Hz \sim 15.7kHz$	-	-	4
Switching Time	Delay Time	$t_d$	-	-	35	ns
	Rise Time	$t_r$			35	
	Storage Time	$t_{stg}$	-	-	225	
	Fall Time	$t_f$			75	