

**2SC 3198**  
**2SC 3198** (L)

**SILICON NPN TRANSISTOR**  
**EPITAXIAL PLANAR TYPE (PCT PROCESS)**

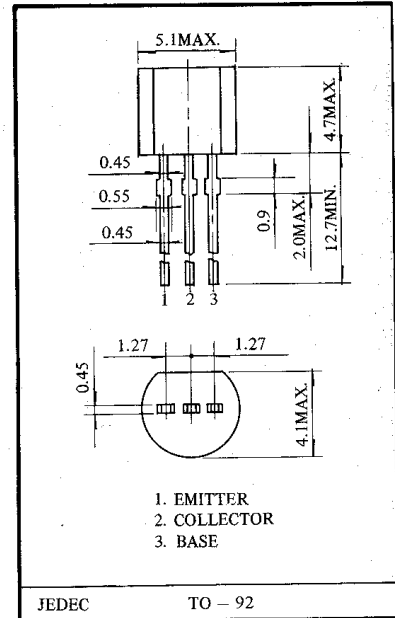
Unit in mm

**APPLICATIONS**

- Low Frequency Amplifiers
- Low Noise Amplifiers

**FEATURES**

- Excellent  $h_{FE}$  Linearity,  $h_{FE}(0.1mA)/h_{FE}(2mA) = 0.95$  (Typ.)
- High  $h_{FE}$  (70~700).
- Excellent Safe Operation Area.
- Low Noise 2SC3198 NF=1dB (TYP), 10dB (Max).  
 2SC3198(L) NF=0.2dB (TYP), 3dB (Max).
- Complementary to the 2SA1266/2SA1266(L).



**MAXIMUM RATINGS** ( $T_a = 25^\circ C$ )

CHARACTERISTIC	SYMBOL	RATING	UNIT	CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector - Base Voltage	$V_{CBO}$	60	V	Emitter Current	$I_E$	-150	mA
Collector - Emitter Voltage	$V_{CEO}$	50	V	Collector Power Dissipation	$P_C$	400	mW
Emitter - Base Voltage	$V_{EBO}$	5	V	Junction Temperature	$T_j$	125	$^\circ C$
Collector Current	$I_C$	150	mA	Storage Temperature Range	$T_{stg}$	-55~125	$^\circ C$

**ELECTRICAL CHARACTERISTICS** ( $T_a = 25^\circ C$ )

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut off Current	$I_{CBO}$	$V_{CB} = 60V, I_E = 0$	-	-	0.1	$\mu A$
Emitter Cut off Current	$I_{EBO}$	$V_{EB} = 5V, I_C = 0$	-	-	0.1	$\mu A$
DC Current Gain (1)	$h_{FE(1)}$	$V_{CE} = 6V, I_C = 2mA$	70	-	700	-
DC Current Gain (2)	$h_{FE(2)}$	$V_{CE} = 6V, I_C = 150mA$	25	-	-	-
Collector - Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 100mA, I_B = 10mA$	-	0.1	0.25	V
Base - Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 100mA, I_B = 100mA$	-	-	0.1	V
Transition Frequency	$f_T$	$V_{CE} = 10V, I_E = -1mA$	80	-	-	MHz
Output Capacitance	$C_{ob}$	$V_{CB} = 10V, I_E = 0, f = 1MHz$	-	2.0	3.0	pF
Base Spreading Resistance	$r_{bb'}$	$V_{CB} = 10V, I_E = -1mA, f = 30MHz$	-	50	-	$\Omega$
Noise Figure	2SC3198	$V_{CE} = -6V, I_C = 0.1mA$	-	1	10	dB
	2SC3198(L)	$R_g = 10k\Omega, f = 1 KHz$	-	0.2	3	

■ **NOTE: According to  $h_{FE}$  (1), Classified as follows**

O	70-140	Y	120~240	GR	200~400	BL	350~700
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