

< SMALL-SIGNAL TRANSISTOR >

# RT1P137L

TRANSISTOR WITH RESISTOR  
FOR SWITCHING APPLICATION  
SILICON PNP EPITAXIAL TYPE

## DESCRIPTION

RT1P137L is a one chip transistor with built-in bias resistor,  
NPN type is RT1N137L.

## FEATURE

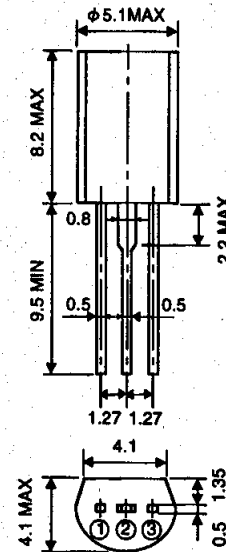
- Built-in bias resistor ( $R_1=1k\Omega, R_2=22k\Omega$ )
- High collector current  $I_C=-1A$
- Low  $V_{CE(sat)}$   $V_{CE(sat)}=-0.3V_{max}$  ( $@ I_C=-300mA, I_B=-3mA$ )
- High collector dissipation  $P_C=900mW$

## APPLICATION

Inverted circuit, switching circuit, interface circuit, driver circuit.

## OUTLINE DRAWING

Unit:mm



### TERMINAL CONNECTOR

- ① : EMITTER
  - ② : COLLECTOR
  - ③ : BASE
- EIAJ : —  
JEDEC : —

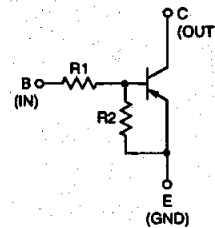
Note)

The dimension without tolerance represent central value.

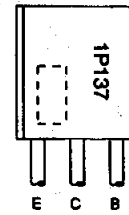
## MAXIMUM RATINGS ( $T_a=25^\circ C$ )

Symbol	Parameter	Rated	Unit
$V_{CBO}$	Collector to Base voltage	-40	V
$V_{EBO}$	Emitter to Base voltage	-6	V
$V_{CEO}$	Collector to Emitter voltage	-40	V
$I_C$	Collector current	-1	A
$I_{CM}$	Peak Collector current	-2	A
$P_C$	Collector dissipation ( $T_a=25^\circ C$ )	900	mW
$T_j$	Junction temperature	+150	$^\circ C$
$T_{stg}$	Storage temperature	-55 to +150	$^\circ C$

## EQUIVALENT CIRCUIT



## MARKING



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

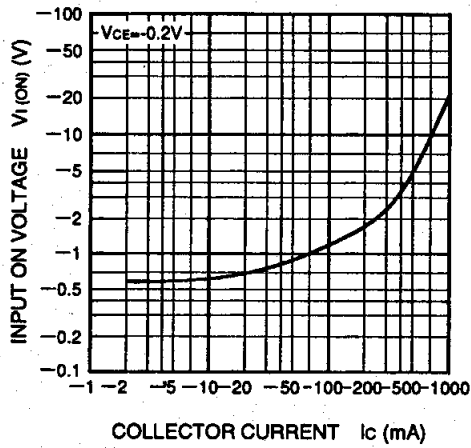
Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
$V_{(BR)CEO}$	C to E break down voltage	$I_C=-1mA, R_{BE}=\infty$	-40			V
$I_{CBO}$	Collector cut off current	$V_{CB}=-40V, I_E=0$			-0.1	$\mu A$
$h_{FE}$	DC forward current gain	$V_{CE}=-5V, I_C=-100mA$	100			—
$V_{CE(sat)}$	C to E saturation voltage	$I_C=-300mA, I_B=-3mA$		-0.1	-0.3	V
$V_{I(ON)}$	Input on voltage	$V_{CE}=-0.2V, I_C=-300mA$		-2.4	-4.0	V
$V_{I(OFF)}$	Input off voltage	$V_{CE}=-5V, I_C=-100\mu A$	0.4	0.53		V
$R_1$	Input resistor		0.7	1.0	1.3	$k\Omega$
$R_2/R_1$	Resistor ratio		20	22	24	—
$f_r$	Gain band width product	$V_{CE}=-6V, I_E=10mA$		130		MHz

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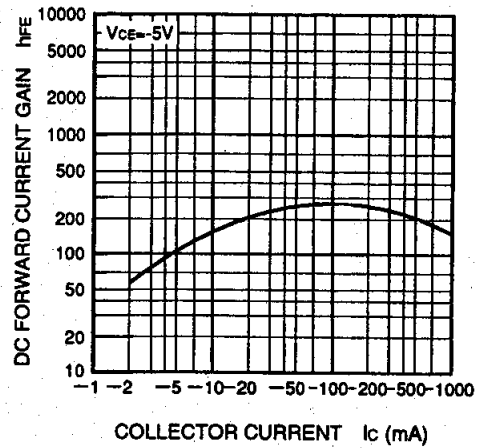
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## TYPICAL CHARACTERISTICS

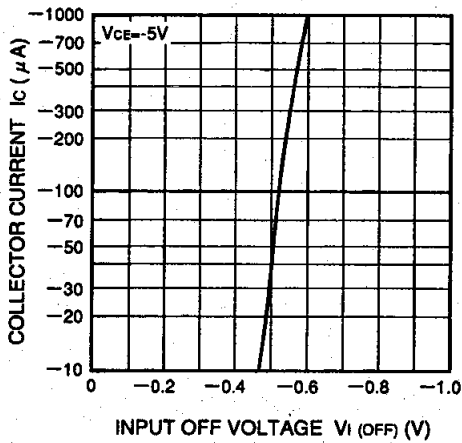
INPUT ON VOLTAGE  
VS. COLLECTOR CURRENT



DC FORWARD CURRENT GAIN  
VS. COLLECTOR CURRENT



COLLECTOR CURRENT  
VS. INPUT OFF VOLTAGE



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