



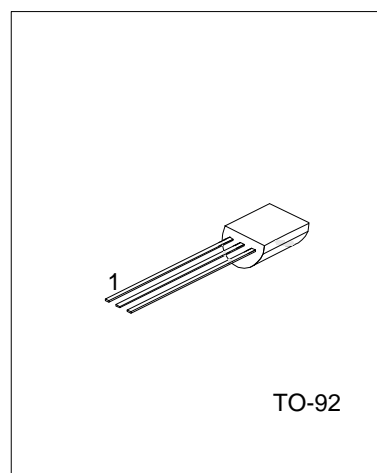
## 9018

## NPN EPITAXIAL PLANAR TRANSISTOR

AM/FM AMPLIFIER, LOCAL  
OSCILLATOR OF FM/VHF  
TUNER

### FEATURES

\* High Current Gain Bandwidth Product  
 $f_T = 1.1\text{GHz}$  (Typ)



### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
9018L-x-T92-B	9018G-x-T92-B	TO-92	E	B	C	Tape Box
9018L-x-T92-K	9018G-x-T92-K	TO-92	E	B	C	Bulk
9018L-x-T92-R	9018G-x-T92-R	TO-92	E	B	C	Tape Reel

Note: Pin Assignment: E: EMITTER B: BASE C: COLLECTOR

<p>9018L-x-T92-B</p> <ul style="list-style-type: none"><li>(1) Packing Type</li><li>(2) Package Type</li><li>(3) Rank</li><li>(4) Lead Free</li></ul>	<p>(1) B: Tape Box, T: Tape Reel, R: Tape Reel</p> <p>(2) T92: TO-92</p> <p>(3) x: refer to Classification of Hfe</p> <p>(4) G: Halogen Free, L: Lead Free</p>
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■ ABSOLUTE MAXIMUM RATING ( $T_A=25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	$V_{CBO}$	30	V
Collector-Emitter Voltage	$V_{CEO}$	15	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	50	mA
Collector Power Dissipation	$P_C$	400	mW
Junction Temperature	$T_J$	125	$^\circ\text{C}$
Operating Temperature	$T_{OPR}$	-20 ~ +85	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-40 ~ +150	$^\circ\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ )

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C=100\mu\text{A}$ , $I_E=0$	30			V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=1\text{mA}$ , $I_B=0$	15			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E=100\mu\text{A}$ , $I_C=0$	5			V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=12\text{V}$ , $I_E=0$			50	nA
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=10\text{mA}$ , $I_B=1\text{mA}$			0.5	V
DC Current Gain	$h_{FE}$	$V_{CE}=5\text{V}$ , $I_C=1\text{mA}$	28	100	198	
Current Gain Bandwidth Product	$f_T$	$V_{CE}=5\text{V}$ , $I_C=5\text{mA}$	700	1100		MHz
Output Capacitance	$C_{OB}$	$V_{CB}=10\text{V}$ , $I_E=0$ , $f=1\text{MHz}$		1.3	1.7	pF

■ CLASSIFICATION of  $h_{FE}$

RANK	D	E	F	G	H	I
RANGE	28-45	39-60	54-80	72-108	97-146	132-198

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