

2N3133 — 2N3134

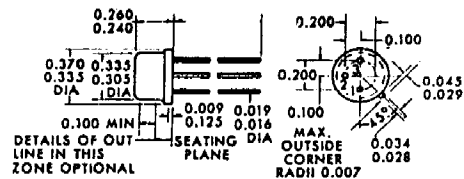
## PNP Silicon Epitaxial Transistors

### APPLICATIONS

These transistors are designed for use as small signal and medium power amplifiers as well as high speed, high current switching applications.

### MECHANICAL OUTLINE

TO-5 Collector in contact with case.



### MAXIMUM RATINGS

Total Device Dissipation	600 mW
Storage Temperature	-65°C to +200°C
Collector Current	600 mA

### DESIGN CHARACTERISTICS AT 25°C (Except as Noted)

SYMBOL	PARAMETER	TEST CONDITIONS	MIN.	MAX.	UNITS
$BV_{CB0}$	Collector-Base Breakdown Voltage	$I_C = 10\mu A, I_E = 0$	-50		V
$BV_{CE0}$	Collector-Emitter Breakdown Voltage	$I_C = 10mA, I_B = 0$	-35		V
$BV_{EB0}$	Emitter-Base Breakdown Voltage	$I_E = 10\mu A, I_C = 0$	-4		V
$I_{CBO}$	Collector Cut-off Current	$V_{CB} = -30V, I_E = 0, T_A = 25^\circ C$ $T_A = 150^\circ C$	-	50	nA
$I_{CEX}$	Collector Reverse Current	$V_{CE} = -30V, V_{EB} = .5V$	-	0.1	$\mu A$
$h_{FE}$	D.C. Forward Current Transfer Ratio	$V_{CE} = -10V, I_C = 1mA$	-	-	-
		2N3133	25	-	-
		2N3134	50	-	-
		* $I_C = 150mA$ 2N3133	40	120	-
		2N3134	100	300	-
		* $V_{CE} = 1.0V, I_C = 150mA$ 2N3133	10	-	-
		2N3134	25	-	-
* $V_{CE(sat)}$	Collector Saturation Voltage	$I_C = 150mA, I_B = 15mA$	-	-0.6	V
* $V_{BE(sat)}$	Base-Saturation Voltage	$I_C = 150mA, I_B = 15mA$	-	-1.5	V
$h_{fe}$	A.C. Forward Current Transfer Ratio	$V_{CE} = -20V, I_C = 50mA, f = 100mc$	2.0	-	-
$C_{ob}$	Collector Capacitance	$V_{CB} = -10V, I_E = 0, f = 100kc$	-	10	pf
$C_{ib}$	Input Capacitance	$V_{BE} = -2V, I_C = 0, f = 100kc$	-	40	pf
$t_{ON}$	Turn-on Time	$V_{CC} = -30V, I_{CS} = 150mA, I_{B1} = 15mA$	-	75	nsec
$t_{OFF}$	Turn-off Time	$V_{CC} = -6V, I_{CS} = 150mA$ $I_{B1} = -I_{B2} = 15mA$	-	150	nsec

\* Pulse Test: Pulse width  $\leq 300$  nsec, duty cycle 2%