

TIP33 TIP33A TIP33B TIP33C NPN  
 TIP34 TIP34A TIP34B TIP34C PNP

**COMPLEMENTARY  
 SILICON POWER TRANSISTORS**



**TO-218 TRANSISTOR CASE**



[www.centrasemi.com](http://www.centrasemi.com)

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR TIP33 and TIP34 series devices are complementary silicon high power transistors manufactured by the epitaxial base process, designed for general purpose amplifier and switching applications.

**MARKING: FULL PART NUMBER**

**MAXIMUM RATINGS:** ( $T_C=25^\circ\text{C}$ )

Collector-Base Voltage  
 Collector-Emitter Voltage  
 Emitter-Base Voltage  
 Continuous Collector Current  
 Peak Collector Current  
 Continuous Base Current  
 Power Dissipation ( $T_A=25^\circ\text{C}$ )  
 Power Dissipation  
 Operating and Storage Junction Temperature  
 Thermal Resistance  
 Thermal Resistance

SYMBOL	TIP33	TIP33A	TIP33B	TIP33C	UNITS
	TIP34	TIP34A	TIP34B	TIP34C	
$V_{CBO}$	40	60	80	100	V
$V_{CEO}$	40	60	80	100	V
$V_{EBO}$			5.0		V
$I_C$			10		A
$I_{CM}$			15		A
$I_B$			3.0		A
$P_D$			3.5		W
$P_D$			80		W
$T_J, T_{stg}$			-65 to +150		$^\circ\text{C}$
$\theta_{JA}$			35.7		$^\circ\text{C/W}$
$\theta_{JC}$			1.56		$^\circ\text{C/W}$

**ELECTRICAL CHARACTERISTICS:** ( $T_C=25^\circ\text{C}$  unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$I_{CEO}$	$V_{CE}=30\text{V}$ (TIP33, TIP33A, TIP34, TIP34A)		0.7	mA
$I_{CEO}$	$V_{CE}=60\text{V}$ (TIP33B, TIP33C, TIP34B, TIP34C)		0.7	mA
$I_{CES}$	$V_{CE}=\text{Rated } V_{CEO}$		0.4	mA
$I_{EBO}$	$V_{EB}=5.0\text{V}$		1.0	mA
$BV_{CEO}$	$I_C=30\text{mA}$ (TIP33, TIP34)	40		V
$BV_{CEO}$	$I_C=30\text{mA}$ (TIP33A, TIP34A)	60		V
$BV_{CEO}$	$I_C=30\text{mA}$ (TIP33B, TIP34B)	80		V
$BV_{CEO}$	$I_C=30\text{mA}$ (TIP33C, TIP34C)	100		V
$V_{CE(SAT)}$	$I_C=3.0\text{A}, I_B=0.3\text{A}$		1.0	V
$V_{CE(SAT)}$	$I_C=10\text{A}, I_B=2.5\text{A}$		4.0	V
$V_{BE(ON)}$	$V_{CE}=4.0\text{V}, I_C=3.0\text{A}$		1.6	V
$V_{BE(ON)}$	$V_{CE}=4.0\text{V}, I_C=10\text{A}$		3.0	V
$h_{FE}$	$V_{CE}=4.0\text{V}, I_C=1.0\text{A}$	40		
$h_{FE}$	$V_{CE}=4.0\text{V}, I_C=3.0\text{A}$	20	100	
$h_{fe}$	$V_{CE}=10\text{V}, I_C=0.5\text{A}, f=1.0\text{kHz}$	20		
$f_T$	$V_{CE}=10\text{V}, I_C=0.5\text{A}, f=1.0\text{MHz}$	3.0		MHz

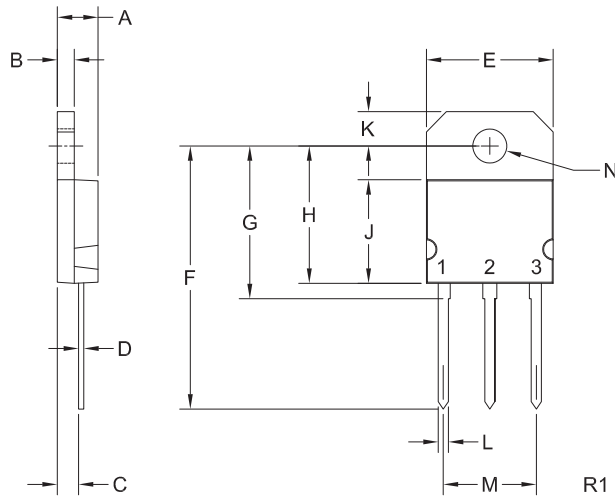
R1 (18-July 2013)

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TO-218 TRANSISTOR CASE - MECHANICAL OUTLINE



**LEAD CODE:**  
 1) Base  
 2) Collector  
 3) Emitter  
 Tab) Collector

**MARKING:**  
**FULL PART NUMBER**

SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.185	0.193	4.70	4.90
B	0.047	0.082	1.20	2.08
C	0.098		2.49	
D	0.019	0.030	0.48	0.76
E	0.578	0.598	14.68	15.19
F	1.220		30.99	
G	0.708		17.98	
H	-	0.637	-	16.18
J	-	0.480	-	12.19
K	0.155	0.163	3.94	4.14
L	0.043	0.051	1.09	1.30
M	0.425	0.437	10.80	11.10
N	0.157	0.161	3.99	4.09

TO-218 Transistor (REV: R1)

R1 (18-July 2013)