

CentralTM Semiconductor Corp.

145 Adams Avenue, Hauppauge, NY 11788 USA

Tel: (631) 435-1110 • Fax: (631) 435-1824

Manufacturers of World Class Discrete Semiconductors

TIP33, A, B, C NPN

TIP34, A, B, C PNP

COMPLEMENTARY SILICON POWER
TRANSISTORS

10 AMPS

JEDEC TO-218 CASE

DESCRIPTION

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

MAXIMUM RATINGS ($T_C=25^{\circ}\text{C}$ unless otherwise noted)

	SYMBOL	TIP33 TIP34	TIP33A TIP34A	TIP33B TIP34B	TIP33C TIP34C	UNIT
Collector - Base Voltage	V_{CB0}	40	60	80	100	V
Collector - Emitter Voltage	V_{CE0}	40	60	80	100	V
Emitter - Base Voltage	V_{EB0}	5.0	5.0	5.0	5.0	V
Collector Current	I_C	10	10	10	10	A
Collector Current (Peak)	I_{CM}	15	15	15	15	A
Base Current	I_B	3.0	3.0	3.0	3.0	A
Power Dissipation ($T_A=25^{\circ}\text{C}$)	P_D	3.5	3.5	3.5	3.5	W
Power Dissipation	P_D	80	80	80	80	W
Operating and Storage						
Junction Temperature	T_J, T_{STG}	-65 TO +150				$^{\circ}\text{C}$
Thermal Resistance	θ_{JA}	35.7				$^{\circ}\text{C}/\text{W}$
Thermal Resistance	θ_{JC}	1.56				$^{\circ}\text{C}/\text{W}$

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

SYMBOL	TEST CONDITIONS	TIP33 TIP34		TIP33A TIP34A		TIP33B TIP34B		TIP33C TIP34C		UNIT
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	
I_{CE0}	$V_{CE}=30\text{V}$		0.7		0.7		-		-	mA
I_{CE0}	$V_{CE}=60\text{V}$		-		-		0.7		0.7	mA
I_{CES}	$V_{CE}=\text{RATED } V_{CES}$		0.4		0.4		0.4		0.4	mA
I_{EB0}	$V_{EB}=5.0\text{V}$		1.0		1.0		1.0		1.0	mA
BV_{CE0}	$I_C=30\text{mA}$	40		60		80		100		V
$V_{CE}(\text{SAT})$	$I_C=3.0\text{A}, I_B=0.3\text{A}$		1.0		1.0		1.0		1.0	V
$V_{CE}(\text{SAT})$	$I_C=10\text{A}, I_B=2.5\text{A}$		4.0		4.0		4.0		4.0	V
$V_{BE}(\text{ON})$	$V_{CE}=4.0\text{V}, I_C=3.0\text{A}$		1.6		1.6		1.6		1.6	V
$V_{BE}(\text{ON})$	$V_{CE}=4.0\text{V}, I_C=10\text{A}$		3.0		3.0		3.0		3.0	V
h_{FE}	$V_{CE}=4.0\text{V}, I_C=1.0\text{A}$	40		40		40		40		
h_{FE}	$V_{CE}=4.0\text{V}, I_C=3.0\text{A}$	20	100	20	100	20	100	20	100	
h_{fe}	$V_{CE}=10\text{V}, I_C=0.5\text{A}, f=1.0\text{kHz}$	20		20		20		20		
f_T	$V_{CE}=10\text{V}, I_C=0.5\text{A}, f=1.0\text{MHz}$	3.0		3.0		3.0		3.0		MHz