

CentralTM Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

TIP47 THRU TIP50
NPN SILICON HIGH VOLTAGE
POWER TRANSISTOR

JEDEC TO-220AB CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR TIP47 Series types are Silicon NPN Triple Diffused Mesa Power Transistors designed for high voltage applications such as power supplies and other switching applications.

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

	<u>SYMBOL</u>	<u>TIP47</u>	<u>TIP48</u>	<u>TIP49</u>	<u>TIP50</u>	<u>UNIT</u>
Collector-Base Voltage	V_{CB0}	350	400	450	500	V
Collector-Emitter Voltage	V_{CE0}	250	300	350	400	V
Emitter-Base Voltage	V_{EB0}		5.0			V
Collector Current	I_C		1.0			A
Collector Current-Peak	I_{CM}		2.0			A
Base Current	I_B		0.6			A
Power Dissipation	P_D		40			W
Unclamped Inducting Load	E		20			mJ
Operating and Storage Temperature	T_J, T_{stg}		-65 TO +150			$^\circ\text{C}$
Thermal Resistance	θ_{JC}		3.13			$^\circ\text{C/W}$

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

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>MIN</u>	<u>MAX</u>	<u>UNIT</u>
I_{CES}	$V_{CE}=\text{Rated } V_{CB0}$		1.0	mA
I_{CE0}	$V_{CE}=150\text{V (TIP47)}$		1.0	mA
I_{CE0}	$V_{CE}=200\text{V (TIP48)}$		1.0	mA
I_{CE0}	$V_{CE}=250\text{V (TIP49)}$		1.0	mA
I_{CE0}	$V_{CE}=300\text{V (TIP50)}$		1.0	mA
I_{EBO}	$V_{BE}=5.0\text{V}$		1.0	mA
BV_{CE0}	$I_C=30\text{mA (TIP47)}$	250		V
BV_{CE0}	$I_C=30\text{mA (TIP48)}$	300		V
BV_{CE0}	$I_C=30\text{mA (TIP49)}$	350		V
BV_{CE0}	$I_C=30\text{mA (TIP50)}$	400		V
h_{FE}	$V_{CE}=10\text{V}, I_C=0.3\text{A}$	30	150	
h_{FE}	$V_{CE}=10\text{V}, I_C=1.0\text{A}$	10	-	
h_{fe}	$V_{CE}=10\text{V}, I_C=0.2\text{A}, f=1.0\text{kHz}$	25		
$V_{CE(SAT)}$	$I_C=1.0\text{A}, I_B=0.2\text{A}$		1.0	V
$V_{BE(ON)}$	$V_{CE}=10\text{V}, I_C=1.0\text{A}$		1.5	V
f_T	$V_{CE}=10\text{V}, I_C=0.2\text{A}, f=2.0\text{MHz}$	10		MHz