

CentralTM Semiconductor Corp.

145 Adams Avenue, Hauppauge, NY 11788 USA
Tel: (631) 435-1110 • Fax: (631) 435-1824

Manufacturers of World Class Discrete Semiconductors

2N6053 2N6054 PNP
2N6055 2N6056 NPN

COMPLEMENTARY SILICON
DARLINGTON POWER TRANSISTOR

JEDEC TO-3 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N6053, 6055 Series types are Complementary Silicon Darlington Power Transistors designed for amplifier and switching applications.

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

	SYMBOL	2N6053 2N6055	2N6054 2N6056	UNIT
Collector-Base Voltage	V_{CB0}	60	80	V
Collector-Emitter Voltage	V_{CE0}	60	80	V
Emitter-Base Voltage	V_{EB0}	5.0	5.0	V
Collector Current	I_C	8.0	8.0	A
Collector Current (Peak)	I_{CM}	16	16	A
Base Current	I_B	120	120	mA
Power Dissipation	P_D	100	100	W
Operating and Storage Junc. Temp.	T_J, T_{stg}	-65 TO +200		$^\circ\text{C}$
Thermal Resistance	θ_{JC}	1.75		$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNIT
I_{CEV}	$V_{CE}=\text{Rated } V_{CB0}, V_{EB}(\text{OFF})=1.5\text{V}$		0.5	mA
I_{CEV}	$V_{CE}=\text{Rated } V_{CB0}, V_{EB}(\text{OFF})=1.5\text{V}, T_C=150^\circ\text{C}$		5.0	mA
I_{CEO}	$V_{CE}=\frac{1}{2} \text{ Rated } V_{CB0}$		0.5	mA
I_{EB0}	$V_{BE}=5.0\text{V}$		2.0	mA
BV_{CE0}	$I_C=100\text{mA}$ (2N6053, 2N6055)	60		V
BV_{CE0}	$I_C=100\text{mA}$ (2N6054, 2N6056)	80		V
$V_{CE}(\text{SAT})$	$I_C=4.0\text{A}, I_B=16\text{mA}$		2.0	V
$V_{CE}(\text{SAT})$	$I_C=8.0\text{A}, I_B=80\text{mA}$		3.0	V
$V_{BE}(\text{SAT})$	$I_C=8.0\text{A}, I_B=80\text{mA}$		4.0	V
$V_{BE}(\text{ON})$	$V_{CE}=3.0\text{V}, I_C=4.0\text{A}$		2.8	V
h_{FE}	$V_{CE}=3.0\text{V}, I_C=4.0\text{A}$	750	18,000	
h_{FE}	$V_{CE}=3.0\text{V}, I_C=8.0\text{A}$	100	-	
h_{fe}	$V_{CE}=3.0\text{V}, I_C=3.0\text{A}, f=1.0\text{kHz}$	300		
f_T	$V_{CE}=3.0\text{V}, I_C=3.0\text{A}, f=1.0\text{MHz}$	4.0		MHz
C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=0.1\text{MHz}$ (2N6053, 2N6054)		300	pF
C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=0.1\text{MHz}$ (2N6055, 2N6056)		200	pF