

# Central<sup>TM</sup> Semiconductor Corp.

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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	$V_{EBO}$	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	$\theta_{JC}$	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
$I_{EBO}$	$V_{BE}=5.0\text{V}$		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

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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### DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2<sup>nd</sup> day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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### REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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### CONTACT US

#### Corporate Headquarters & Customer Support Team

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