

## Silicon NPN Power Transistors

## 2N6043 2N6044 2N6045

## DESCRIPTION

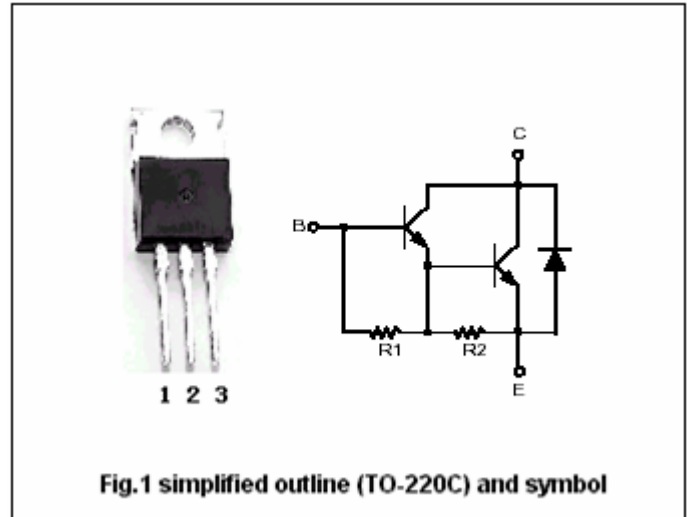
- With TO-220C package
- Complement to type 2N6040/6041/6042
- DARLINGTON
- High DC current gain
- Low collector saturation voltage

## APPLICATIONS

- For general-purpose amplifier and low-speed switching applications

## PINNING

PIN	DESCRIPTION
1	Base
2	Collector;connected to mounting base
3	Emitter

Absolute maximum ratings( $T_c=25^\circ$ )

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	2N6043	60	V
		2N6044	80	
		2N6045	100	
$V_{CEO}$	Collector-emitter voltage	2N6043	60	V
		2N6044	80	
		2N6045	100	
$V_{EBO}$	Emitter-base voltage	Open collector	5	V
$I_C$	Collector current-DC		8	A
$I_{CM}$	Collector current-Peak		16	A
$I_B$	Base current-DC		120	mA
$P_D$	Total power dissipation	$T_c=25^\circ$	75	W
		$T_a=25^\circ$	2.2	
$T_j$	Junction temperature		150	$^\circ$
$T_{stg}$	Storage temperature		-65~150	$^\circ$

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th\ j-c}$	Thermal resistance junction to case	1.67	$^\circ/W$

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## CHARACTERISTICS

T<sub>j</sub>=25 °C unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CE0(SUS)</sub>	Collector-emitter sustaining voltage	2N6043	I <sub>C</sub> =30mA, I <sub>B</sub> =0	60			V
		2N6044		80			
		2N6045		100			
V <sub>CEsat-1</sub>	Collector-emitter saturation voltage	2N6043/6044	I <sub>C</sub> =4A, I <sub>B</sub> =16mA			2.0	V
		2N6045	I <sub>C</sub> =3A, I <sub>B</sub> =12mA				
V <sub>CEsat-2</sub>	Collector-emitter saturation voltage		I <sub>C</sub> =8A, I <sub>B</sub> =80mA			4.0	V
V <sub>BEsat</sub>	Base-emitter saturation voltage		I <sub>C</sub> =8A, I <sub>B</sub> =80mA			4.5	V
V <sub>BE</sub>	Base-emitter on voltage		I <sub>C</sub> =4A; V <sub>CE</sub> =4V			2.8	V
I <sub>CBO</sub>	Collector cut-off current		V <sub>CB</sub> =Rated V <sub>CB</sub> , I <sub>E</sub> =0			20	μA
I <sub>CEO</sub>	Collector cut-off current		V <sub>CE</sub> =Rated V <sub>CE</sub> , V <sub>BE</sub> =-1.5V T <sub>C</sub> =150 °C			20 200	μA
I <sub>CEO</sub>	Collector cut-off current		V <sub>CE</sub> =Rated V <sub>CE</sub> , I <sub>B</sub> =0			20	μA
I <sub>EBO</sub>	Emitter cut-off current		V <sub>EB</sub> =5V; I <sub>C</sub> =0			2.0	mA
h <sub>FE-1</sub>	DC current gain	2N6043/6044	I <sub>C</sub> =4A; V <sub>CE</sub> =4V	1000		20000	
		2N6045	I <sub>C</sub> =3A; V <sub>CE</sub> =4V				
h <sub>FE-2</sub>	DC current gain		I <sub>C</sub> =8A; V <sub>CE</sub> =4V	100			
C <sub>ob</sub>	Output capacitance		I <sub>E</sub> =0; V <sub>CB</sub> =10V, f=0.1MHz			200	pF

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PACKAGE OUTLINE

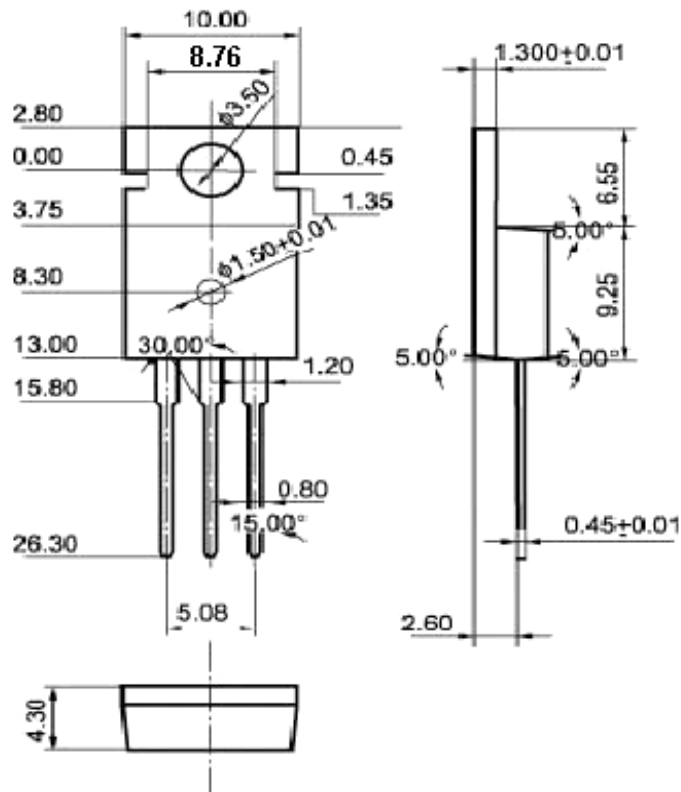


Fig.2 Outline dimensions