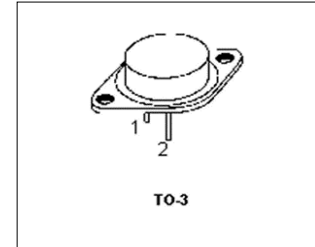


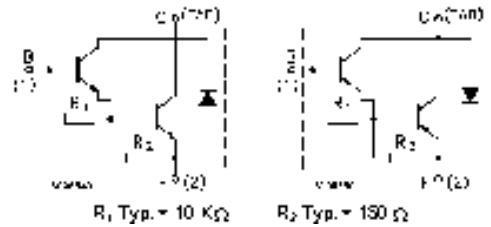
2N6050/51/52
2N6057/58/59

POWER COMPLEMENTARY SILICON TRANSISTORS



The 2N6050, 2N6051 and 2N6052 are silicon epitaxial-base PNP transistors in monolithic Darlington configuration mounted in Jedec TO-3 metal case. They are intended for use in power linear and low frequency switching applications. The complementary NPN types are 2N6057, 2N6058 and 2N6059 respectively.

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit	
V_{CBO}	Collector-Base Voltage	$I_E=0$	2N6050 2N6057	60	V
			2N6051 2N6058	80	
			2N6052 2N6059	100	
V_{CEO}	Collector-Emitter Voltage	$I_B=0$	2N6050 2N6057	60	V
			2N6051 2N6058	80	
			2N6052 2N6059	100	
V_{CEX}	Collector-Emitter Voltage	$V_{BE}=-1.5$ V	2N6050 2N6057	60	V
			2N6051 2N6058	80	
			2N6052 2N6059	100	

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2N6057/58/59

V_{EBO}	<i>Emitter-Base Voltage</i>	$I_C=0$	2N6050 2N6057 2N6051 2N6058 2N6052 2N6059	5.0	V
I_C	<i>Collector Current</i>		2N6050 2N6057 2N6051 2N6058 2N6052 2N6059	12	A
I_{CM}	<i>Collector Peak Current</i>		2N6050 2N6057 2N6051 2N6058 2N6052 2N6059	20	A
I_B	<i>Base Current</i>		2N6050 2N6057 2N6051 2N6058 2N6052 2N6059	0.2	mA
P_T	<i>Power Dissipation</i>	@ $T_C < 25^\circ$	2N6050 2N6057 2N6051 2N6058 2N6052 2N6059	150	Watts
$T_J T_s$	<i>Junction Storage Temperature</i>		2N6050 2N6057 2N6051 2N6058 2N6052 2N6059	200 -65 to +200	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJ-C}	<i>Thermal Resistance, Junction to Case</i>	1.17	$^\circ\text{C/W}$

2N6050/51/52

2N6050/51/52
2N6057/58/59

ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit	
I_{CEX}	Collector Cutoff Current	$V_{CE} = V_{CEX}$ $V_{BE} = -1.5$ V	2N6050 2N6057	-	-	500	μ A
			2N6051 2N6058	-	-		
			2N6052 2N6059	-	-		
		$V_{CE} = V_{CEX}$ $V_{BE} = -1.5$ V $T_C = 150^\circ\text{C}$	2N6050 2N6057	-	-	5	mA
			2N6051 2N6058	-	-		
			2N6052 2N6059	-	-		
I_{CEO}	Collector Cutoff Current	$V_{CE} = 30$ Vdc, $I_B = 0$	2N6050 2N6057	-	-	1.0	mA
		$V_{CE} = 40$ Vdc, $I_B = 0$	2N6051 2N6058	-	-		
		$V_{CE} = 50$ Vdc, $I_B = 0$	2N6052 2N6059	-	-		
I_{EBO}	Emitter Cutoff Current	$V_{EB} = 5$ V	2N6050 2N6057	-	-	2.0	mA
			2N6051 2N6058	-	-		
			2N6052 2N6059	-	-		
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage (*)	$I_C = 0.1$ A	2N6050 2N6057	60	-	-	V
			2N6051 2N6058	80	-	-	
			2N6052 2N6059	100	-	-	

2N6050/51/52
2N6057/58/59

$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C=6\text{ A}, I_B=24\text{ mA}$	2N6050 2N6057 2N6051 2N6058 2N6052 2N6059	-	-	2.0	V
		$I_C=12\text{ A}, I_B=120\text{ mA}$	2N6050 2N6057 2N6051 2N6058 2N6052 2N6059	-	-	3.0	
$V_{BE(SAT)}$	Base-Emitter Saturation Voltage (*)	$I_C=12\text{ A}, I_B=120\text{ mA}$	2N6050 2N6057 2N6051 2N6058 2N6052 2N6059	-	-	4	V
$V_{BE(ON)}$	Base-Emitter Voltage (*)	$I_C=6\text{ A}, V_{CE}=3\text{ V}$	2N6050 2N6057 2N6051 2N6058 2N6052 2N6059	-	-	2.8	V
f_T	Transition Frequency	$I_C=5\text{ A}, V_{CE}=3\text{ V}, f=1\text{ MHz}$	2N6050 2N6057 2N6051 2N6058 2N6052 2N6059	4	-	-	MHz
h_{FE}	DC Current Gain (*)	$V_{CE}=3\text{ V}, I_C=6.0\text{ A}$	2N6050 2N6057 2N6051 2N6058 2N6052 2N6059	750	-	-	-
		$V_{CE}=3.0\text{ V}, I_C=12\text{ A}$	2N6050 2N6057 2N6051 2N6058 2N6052 2N6059	100	-	-	-

!!! For PNP types current and voltage values are negative !!!

(*) Pulse Width $\approx 300\ \mu\text{s}$, Duty Cycle $\angle 2.0\%$