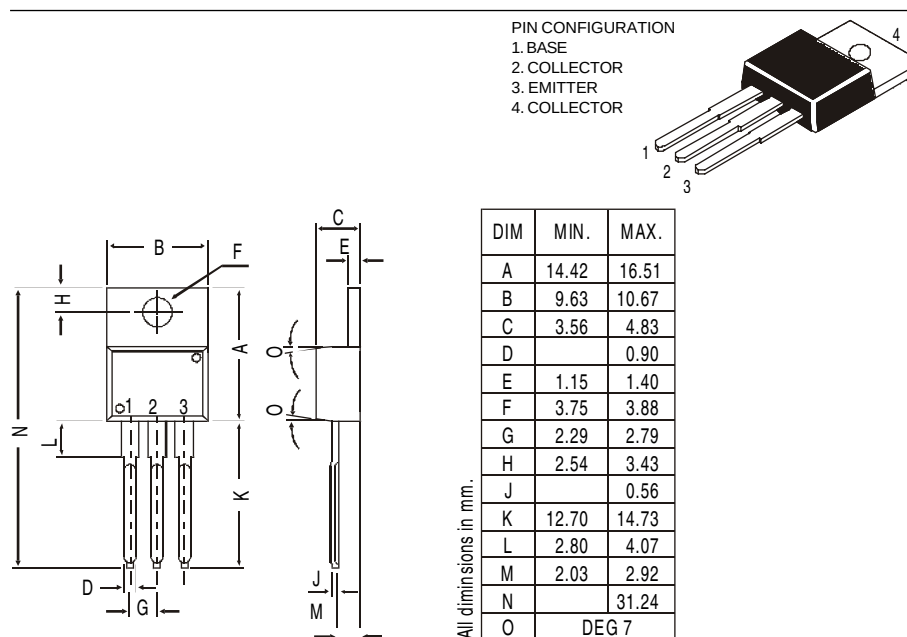


TO-220 Plastic Package

2N6121, 2N6122, 2N6123
2N6124, 2N6125, 2N6126

2N6121, 6122, 6123 NPN PLASTIC POWER TRANSISTORS
2N6124, 6125, 6126 PNP PLASTIC POWER TRANSISTORS
Medium Power Linear and Switching Applications



ABSOLUTE MAXIMUM RATINGS

		6121	6122	6123	
		6124	6125	6126	
Collector-base voltage (open emitter)	V_{CBO}	max. 45	60	80	V
Collector-emitter voltage (open base)	V_{CEO}	max. 45	60	80	V
Collector current	I_C	max. 4.0			A
Total power dissipation up to $T_C = 25^\circ\text{C}$	P_{tot}	max. 40			W
Junction temperature	T_j	max. 150			$^\circ\text{C}$
Collector-emitter saturation voltage	V_{CEsat}	max. 0.6			V
$I_C = 1.5\text{ A}; I_B = 0.15\text{ A}$					
D.C. current gain	h_{FE}	min. 25	25	20	
$I_C = 1.5\text{ A}; V_{CE} = 2\text{ V}$		max. 100	100	80	

RATINGS (at $T_A=25^\circ\text{C}$ unless otherwise specified)

Limiting values

		6121	6122	6123	
		6124	6125	6126	
Collector-base voltage (open emitter)	V_{CBO}	max. 45	60	80	V
Collector-emitter voltage (open base)	V_{CEO}	max. 45	60	80	V
Emitter-base voltage (open collector)	V_{EBO}	max. 5.0			V

2N6121, 2N6122, 2N6123
2N6124, 2N6125, 2N6126

Collector current	I_C	max.	4.0	A
Collector current (Peak)	I_{CM}	max.	7.0	A
Base current	I_B	max.	1.0	A
Total power dissipation up to $T_C = 25^\circ\text{C}$	P_{tot}	max.	40	W
Derate above 25°C		max.	320	mW/°C
Junction temperature	T_j	max.	150	°C
Storage temperature	T_{stg}		-65 to +150	°C

THERMAL RESISTANCE

From junction to case	$R_{th\ j-c}$		3.12	°C/W
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CHARACTERISTICS

$T_{amb} = 25^\circ\text{C}$ unless otherwise specified

			6121	6122	6123	
			6124	6125	6126	
Collector cutoff current						
$I_B = 0; V_{CE} = 45\text{ V}$	I_{CEO}	max.	1.0	–	–	mA
$I_B = 0; V_{CE} = 60\text{ V}$	I_{CEO}	max.	–	1.0	–	mA
$I_B = 0; V_{CE} = 80\text{ V}$	I_{CEO}	max.	–	–	1.0	mA
$V_{EB(off)} = 1.5\text{ V}; V_{CE} = 45\text{ V}$	I_{CEX}	max.	0.1	–	–	mA
$V_{EB(off)} = 1.5\text{ V}; V_{CE} = 60\text{ V}$	I_{CEX}	max.	–	0.1	–	mA
$V_{EB(off)} = 1.5\text{ V}; V_{CE} = 85\text{ V}$	I_{CEX}	max.	–	–	0.1	mA
$V_{EB(off)} = 1.5\text{ V}; V_{CE} = 45\text{ V}; T_C = 125^\circ\text{C}$	$I_{CEXmax.}$		2.0	–	–	mA
$V_{EB(off)} = 1.5\text{ V}; V_{CE} = 60\text{ V}; T_C = 125^\circ\text{C}$	$I_{CEXmax.}$		–	2.0	–	mA
$V_{EB(off)} = 1.5\text{ V}; V_{CE} = 80\text{ V}; T_C = 125^\circ\text{C}$	$I_{CEXmax.}$		–	–	2.0	mA
mA						
$I_E = 0; V_{CB} = 45\text{ V}$	I_{CBO}	max.	0.1	–	–	mA
$I_E = 0; V_{CB} = 60\text{ V}$	I_{CBO}	max.	–	0.1	–	mA
$I_E = 0; V_{CB} = 80\text{ V}$	I_{CBO}	max.	–	–	0.1	mA
Emitter cut-off current						
$I_C = 0; V_{EB} = 5\text{ V}$	I_{EBO}	max.		1.0		mA
Breakdown voltages						
$I_C = 100\text{ mA}; I_B = 0$	$V_{CEO(sus)}^*$	min.	45	60	80	V
$I_C = 1\text{ mA}; I_E = 0$	V_{CBO}	min.	45	60	80	V
$I_E = 1\text{ mA}; I_C = 0$	V_{EBO}	min.		5.0		V
Saturation voltages						
$I_C = 1.5\text{ A}; I_B = 0.15\text{ A}$	V_{CEsat}^*	max.		0.6		V
$I_C = 4\text{ A}; I_B = 1.0\text{ A}$	V_{CEsat}^*	max.		1.4		V
Base-emitter on voltage						
$I_C = 1.5\text{ A}; V_{CE} = 2\text{ V}$	$V_{BE(on)}^*$	max.		1.2		V
D.C. current gain						
$I_C = 1.5\text{ A}; V_{CE} = 2\text{ V}$	h_{FE}^*	min.	25	25	20	
			max.	100	100	80
$I_C = 4\text{ A}; V_{CE} = 2\text{ V}$	h_{FE}^*	min.	10	10	7.0	
Small signal current						
$I_C = 0.1\text{ A}; V_{CE} = 2\text{ V}; f = 1.0\text{ KHz}$	h_{fe}	min.		25		
Transition frequency at $f = 1\text{ MHz}$						
$I_C = 1\text{ A}; V_{CE} = 4\text{ V}$	f_T	min.		2.5		MHz

* Pulse test: pulse width $\leq 300\text{ }\mu\text{s}$; duty cycle $\leq 2\%$.

Notes

Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Discrete Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished on the CDIL Web Site/ CD is believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Discrete Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

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