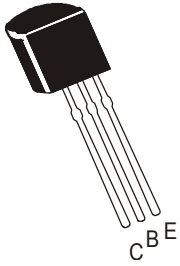


NPN SILICON HIGH SPEED SWITCHING TRANSISTOR

P2N2369A



**TO - 92
Plastic Package**

LOW POWER AND HIGH SPEED SWITCHING APPLICATIONS

ABSOLUTE MAXIMUM RATINGS (T_a=25°C unless specified otherwise)

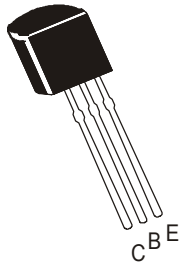
DESCRIPTION	SYMBOL	VALUE	UNIT
Collector Emitter Voltage	V _{CEO}	15	V
Collector Base Voltage	V _{CBO}	40	V
Collector Emitter Voltage (V _{BE} =0)	V _{CES}	40	V
Emitter Base Voltage	V _{EBO}	4.5	V
Collector Current Peak	I _{CM}	500	mA
Power Dissipation @ Ta=25°C	P _D	625	mW
Operating And Storage Junction Temperature Range	T _j , T _{stg}	-65 to +200	°C

THERMAL RESISTANCE

Junction to Ambient in free air	R _{th(j-a)}	200	°C/W
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ELECTRICAL CHARACTERISTICS (T_a=25°C unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	VALUE		UNIT
			MIN	MAX	
Collector Emitter Breakdown Voltage	BV _{CEO(sus)} *	I _C =10mA, I _B =0	15		V
Collector Emitter Breakdown Voltage	BV _{CES}	I _C =10μA, V _{BE} =0	40		V
Collector Base Breakdown Voltage	BV _{CBO}	I _C =10μA, I _E =0	40		V
Emitter Base Breakdown Voltage	BV _{EBO}	I _E =10μA, I _C =0	4.5		V
Collector Cutoff Current	I _{CBO}	V _{CB} =20V, I _E =0 Ta=150°C		30	μA
Collector Cutoff Current	I _{CES}	V _{CE} =20V, V _{BE} =0		0.4	μA
Base Current	I _B	V _{CE} =20V, V _{BE} =0		0.4	μA
Collector Emitter Saturation Voltage	V _{CE(sat)} *	I _C =10mA, I _B =1mA		0.20	V
		I _C =30mA, I _B =3mA		0.25	V
		I _C =100mA, I _B =10mA		0.5	V
		I _C =10mA, I _B =1mA Ta=125°C		0.3	V



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ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	VALUE		UNIT
			MIN	MAX	
Base Emitter Saturation Voltage	$V_{BE(sat)}$ *	$I_C=10\text{mA}, I_B=1\text{mA}$	0.7	0.85	V
		$I_C=30\text{mA}, I_B=3\text{mA}$		0.15	V
		$I_C=100\text{mA}, I_B=10\text{mA}$		1.60	V
		$I_C=10\text{mA}, I_B=1\text{mA}$ $T_a=+125^\circ\text{C}$	0.59		V
		$I_C=10\text{mA}, I_B=1\text{mA}$ $T_a=-55^\circ\text{C}$		1.02	V
DC Current Gain	h_{FE} *	$I_C=10\text{mA}, V_{CE}=1\text{V}$	40	120	
		$I_C=10\text{mA}, V_{CE}=1\text{V}$ $T_a=-55^\circ\text{C}$	20		
		$I_C=30\text{mA}, V_{CE}=0.4\text{V}$	30		
		$I_C=100\text{mA}, V_{CE}=1\text{V}$	20		
		$I_C=10\text{mA}, V_{CE}=0.35\text{V}$	40	120	

DYNAMIC CHARACTERISTICS

Output Capacitance	C_{ob}	$I_E=0, V_{CB}=5\text{V}$ $f=140\text{KHz}$		4	pF
Transition Frequency	f_T	$V_{CE}=10\text{V}, I_C=10\text{mA}$ $f=100\text{MHz}$	500		MHz

SWITCHING CHARACTERISTICS

Turn on Time	t_{on}	$I_C=10\text{mA}, I_{B1}=3\text{mA},$ $I_{B2}=1.5\text{mA}, V_{CC}=3\text{V}$		12	ns
Turn off Time	t_{off}	$I_C=10\text{mA}, I_{B1}=3\text{mA},$ $V_{CC}=3\text{V}, I_{B2}=1.5\text{mA}$		15	ns
Storage Time	t_s	$I_C=100\text{mA}, I_{B1}=10\text{mA},$ $I_{B2}=10\text{mA}, V_{CC}=10\text{V}$		13	ns

*Pulse Condition: Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$.

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 in the Data Sheet and on the CDIL Web Site/CD are 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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