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Manufacturers of World Class Discrete Semiconductors

CM2894A

PNP SILICON
SWITCHING TRANSISTOR

JEDEC TO-18 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR CM2894A type is a Silicon PNP Saturated Switching Transistor designed for high speed switching applications.

MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	15	V
Collector-Emitter Voltage	V_{CEO}	15	V
Emitter-Base Voltage	V_{EBO}	4.5	V
Collector Current	I_C	50	mA
Power Dissipation	P_D	360	mW
Power Dissipation ($T_C = 25^\circ\text{C}$)	P_D	1.2	W
Operating and Storage			
Junction Temperature	T_J, T_{stg}	-65 to +200	$^\circ\text{C}$
Thermal Resistance	θ_{JA}	486	$^\circ\text{C/W}$
Thermal Resistance	θ_{JC}	146	$^\circ\text{C/W}$

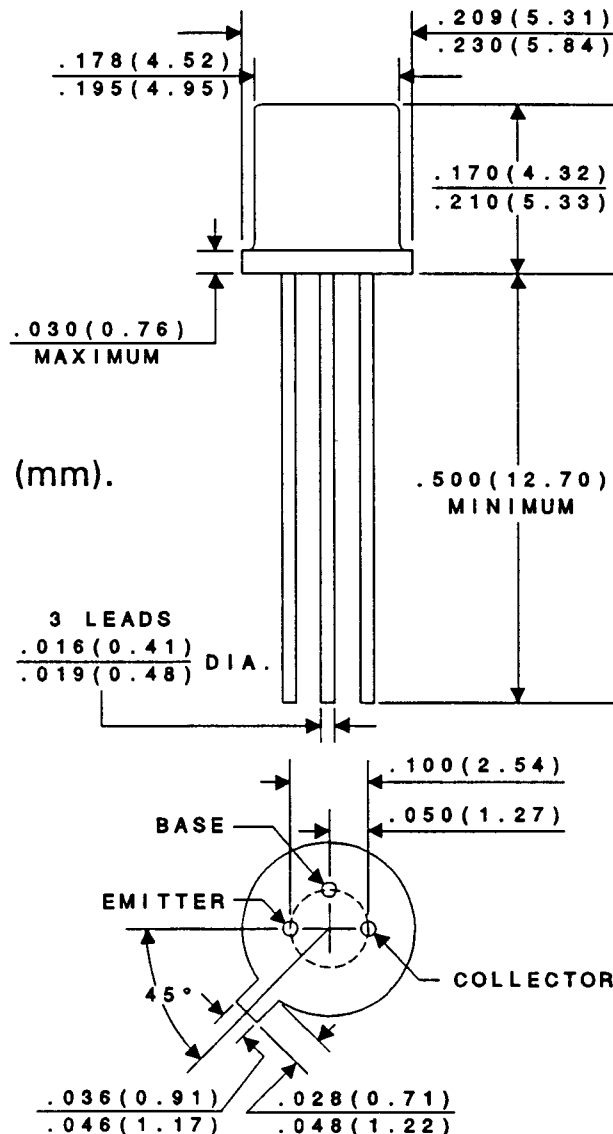
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	$V_{CB} = 8.0\text{V}$		10	nA
I_{CES}	$V_{CE} = 8.0\text{V}$		10	nA
I_{CES}	$V_{CE} = 8.0\text{V}, T_A = 125^\circ\text{C}$		5.0	μA
I_{EBO}	$V_{EB} = 4.5\text{V}$		1.0	μA
BV_{CBO}	$I_C = 100\mu\text{A}$	15		V
BV_{CES}	$I_C = 100\mu\text{A}$	15		V
BV_{CEO}	$I_C = 3.0\text{mA}$	15		V
BV_{EBO}	$I_E = 100\mu\text{A}$	4.5		V
$V_{CE(SAT)}$	$I_C = 1.0\text{mA}, I_B = 100\mu\text{A}$		0.15	V
$V_{CE(SAT)}$	$I_C = 10\text{mA}, I_B = 1.0\text{mA}$		0.18	V
$V_{CE(SAT)}$	$I_C = 50\text{mA}, I_B = 5.0\text{mA}$		0.60	V
$V_{BE(SAT)}$	$I_C = 1.0\text{mA}, I_B = 100\mu\text{A}$		0.80	V
$V_{BE(SAT)}$	$I_C = 10\text{mA}, I_B = 1.0\text{mA}$	0.75	0.95	V
$V_{BE(SAT)}$	$I_C = 50\text{mA}, I_B = 5.0\text{mA}$		1.50	V
h_{FE}	$V_{CE} = 0.5\text{V}, I_C = 1.0\text{mA}$	30		
h_{FE}	$V_{CE} = 1.0\text{V}, I_C = 10\text{mA}$	35	120	
h_{FE}	$V_{CE} = 1.0\text{V}, I_C = 50\text{mA}$	25		

ELECTRICAL CHARACTERISTICS (Continued)

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>MIN</u>	<u>MAX</u>	<u>UNITS</u>
C_{ob}	$V_{CB}=5.0V, I_E=0, f=1.0MHz$		6.0	pF
C_{ib}	$V_{BE}=0.5V, I_C=0, f=1.0MHz$		6.0	pF
f_T	$V_{CE}=10V, I_C=10mA, f=100MHz$	850		MHz
t_{on}	$V_{CC}=1.5V, I_C=10mA, I_B=1.0mA$		15	ns
t_d	$V_{CC}=1.5V, I_C=10mA, I_B=1.0mA$		10	ns
t_r	$V_{CC}=1.5V, I_C=10mA, I_B=1.0mA$		15	ns
t_{off}	$V_{CC}=1.5V, I_C=10mA, I_{B1}=I_{B2}=1.0mA$		20	ns
t_f	$V_{CC}=1.5V, I_C=10mA, I_{B1}=I_{B2}=1.0mA$		10	ns
t_s	$V_{CC}=1.5V, I_C=10mA, I_{B1}=I_{B2}=10mA$		20	ns

JEDEC TO-18 CASE - MECHANICAL OUTLINE



All Dimensions in Inches (mm).