Central™
Semiconductor Corp.

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Manufacturer of World Class Discrete Semiconductors
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2N2411
2N2412

PNP SILICON TRANSISTOR

JEDEC TO-18 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N2411, 2N2412 types are PNP Saturated Switching Transistors designed for high speed switching applications.

MAXIMUM RATINGS:

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	25	V
Collector-Emitter Voltage	V_{CEO}	15	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	100	mA
Power Dissipation	P_D	0.5	W
Power Dissipation (T_C=25°C)	P_D	1.2	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +200	°C
Thermal Resistance	Θ_{JA}	350	°C/W
Thermal Resistance	Θ_{JC}	146	°C/W

ELECTRICAL CHARACTERISTICS:

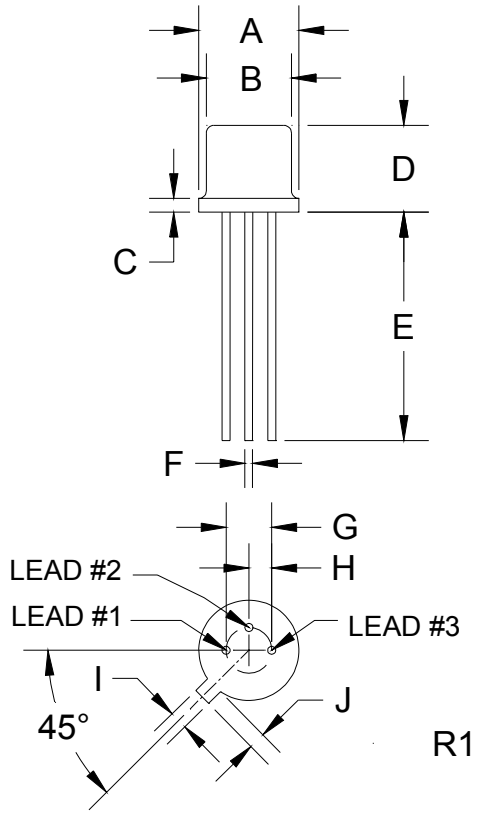
		2N2411		2N2412		
SYMBOL	TEST CONDITIONS	MIN	MAX	MIN	MAX	UNITS
I_{CES}	V_{CE}=15V		10		10	nA
I_{CES}	V_{CE}=15V, T_A=150°C		10		10	µA
I_{EBO}	V_{EB}=5.0V				10	µA
BV_{CBO}	I_C=10µA	25		25		V
BV_{CEO}	I_C=10mA	15		15		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.2		0.2	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA	0.7	0.9	0.7	0.9	V
h_{FE}	V_{CE}=0.5V, I_C=50µA	10		20		
h_{FE}	V_{CE}=0.5V, I_C=10mA	20	60	40	120	
h_{FE}	V_{CE}=0.5V, I_C=10mA, T_A=-55°C		10		20	
h_{FE}	V_{CE}=1.0V, I_C=50mA	10		20		
h_{fe}	V_{CE}=10V, I_C=10mA, f=100MHz	1.4		1.4		
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz		5.0		5.0	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		8.0		8.0	pF

(CONTINUED ON REVERSE SIDE)

ELECTRICAL CHARACTERISTICS (Continued)

SYMBOL	TEST CONDITIONS	2N2411 MIN	2N2411 MAX	2N2412 MIN	2N2412 MAX	UNITS
t_d	$V_{BE(off)}$=1.2V, I_C=10mA, I_{B1}=2.5mA, R_L=300Ω		10		10	ns
t_r	$V_{BE(off)}$=1.2V, I_C=10mA, I_{B1}=2.5mA, R_L=300Ω		20		20	ns
t_{on}	$V_{BE(off)}$=1.2V, I_C=10mA, I_{B1}=2.5mA, R_L=300Ω		25		25	ns
t_s	I_C=10mA, I_{B1}=2.5mA, I_{B2}=2.0mA, R_L=300Ω		90		90	ns
t_f	I_C=10mA, I_{B1}=2.5mA, I_{B2}=2.0mA, R_L=300Ω		20		20	ns
t_{off}	I_C=10mA, I_{B1}=2.5mA, I_{B2}=2.0mA, R_L=300Ω		100		100	ns

JEDEC TO-18 CASE - MECHANICAL OUTLINE



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A (DIA)	0.209	0.230	5.31	5.84
B (DIA)	0.178	0.195	4.52	4.95
C	-	0.030	-	0.76
D	0.170	0.210	4.32	5.33
E	0.500	-	12.70	-
F (DIA)	0.016	0.019	0.41	0.48
G (DIA)	0.100		2.54	
H	0.050		1.27	
I	0.036	0.046	0.91	1.17
J	0.028	0.048	0.71	1.22

TO-18 (REV: R1)

Lead Code:

1) Emitter
2) Base
3) Collector

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