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Manufacturers of World Class Discrete Semiconductors

2N4402

2N4403

PNP SILICON TRANSISTOR

JEDEC TO-92 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N4402, 2N4403 types are molded epoxy Silicon PNP Transistors designed for general purpose amplifier and switching applications. The NPN complementary types are 2N4400, 2N4401.

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

	<u>SYMBOL</u>		<u>UNIT</u>
Collector-Base Voltage	V_{CB0}	40	V
Collector-Emitter Voltage	V_{CE0}	40	V
Emitter-Base Voltage	V_{EB0}	5.0	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	625	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 TO +150	$^{\circ}\text{C}$

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

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	2N4402		2N4403		<u>UNIT</u>
		<u>MIN</u>	<u>MAX</u>	<u>MIN</u>	<u>MAX</u>	
I_{CEV}	$V_{CE}=35\text{V}, V_{EB}(\text{OFF})=0.4\text{V}$		0.1		0.1	μA
BV_{CB0}	$I_C=0.1\text{mA}$	40		40		V
BV_{CE0}	$I_C=1.0\text{mA}$	40		40		V
BV_{EB0}	$I_E=0.1\text{mA}$	5.0		5.0		V
$V_{CE}(\text{SAT})$	$I_C=150\text{mA}, I_B=15\text{mA}$		0.4		0.4	V
$V_{CE}(\text{SAT})$	$I_C=500\text{mA}, I_B=50\text{mA}$		0.75		0.75	V
$V_{BE}(\text{SAT})$	$I_C=150\text{mA}, I_B=15\text{mA}$	0.75	0.95	0.75	0.95	V
$V_{BE}(\text{SAT})$	$I_C=500\text{mA}, I_B=50\text{mA}$		1.3		1.3	V
h_{FE}	$V_{CE}=1.0\text{V}, I_C=0.1\text{mA}$	-		30		
h_{FE}	$V_{CE}=1.0\text{V}, I_C=1.0\text{mA}$	30		60		
h_{FE}	$V_{CE}=1.0\text{V}, I_C=10\text{mA}$	50		100		
h_{FE}	$V_{CE}=2.0\text{V}, I_C=150\text{mA}$	50	150	100	300	
h_{FE}	$V_{CE}=2.0\text{V}, I_C=500\text{mA}$	20		20		
h_{fe}	$V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$	30	250	60	500	
f_T	$V_{CE}=10\text{V}, I_C=20\text{mA}, f=100\text{MHz}$	150		200		MHz
C_{ob}	$V_{CB}=10\text{V}, f=140\text{kHz}$		8.5		8.5	pF
C_{ib}	$V_{BE}=0.5\text{V}, f=140\text{kHz}$		30		30	pF
t_{on}	$V_{CC}=30\text{V}, V_{EB}(\text{OFF})=2.0\text{V}, I_C=150\text{mA}, I_{B1}=15\text{mA}$		35		35	ns
t_{off}	$V_{CC}=30\text{V}, I_C=150\text{mA}, I_{B1}=I_{B2}=15\text{mA}$		255		255	ns