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Manufacturers of World Class Discrete Semiconductors

PN3639
PN3640

PNP SILICON TRANSISTOR

JEDEC TO-92 CASE (EBC)

DESCRIPTION

The CENTRAL SEMICONDUCTOR PN3639, PN3640 types are silicon NPN transistors designed for ultra high speed switching applications.

MAXIMUM RATINGS (TA=25°C unless otherwise noted)

	SYMBOL	PN3639	PN3640	UNIT
Collector-Base Voltage	V_{CBO}	6.0	12	V
Collector-Emitter Voltage	V_{CEO}	6.0	12	V
Emitter-Base Voltage	V_{EBO}	4.0	4.0	V
Collector Current	I_C	80	80	mA
Power Dissipation	P_D	625	625	mW
Power Dissipation (T_C=25°C)	P_D	1.0	1.0	W
Operating and Storage Junction Temperature	T_J, T_{STG}	-65 TO +150		°C

ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

		PN3639		PN3640		
SYMBOL	TEST CONDITIONS	MIN	MAX	MIN	MAX	UNIT
I_{CES}	V_{CE}=3.0V		50		-	nA
I_{CES}	V_{CE}=6.0V		-		50	nA
I_{CES}	V_{CE}=3.0V, T_A=65°C		1.0		-	µA
I_{CES}	V_{CE}=6.0V, T_A=65°C		-		1.0	µA
BV_{CBO}	I_C=100µA	6.0		12		V
BV_{CES}	I_C=100µA	6.0		12		V
BV_{CEO}	I_C=10mA	6.0		12		V
BV_{EBO}	I_E=100µA	4.0		4.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=0.5mA		0.25		0.30	V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.16		0.20	V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA, T_A=65°C		0.23		0.25	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		0.50		0.60	V
$V_{BE(SAT)}$	I_C=10mA, I_B=0.5mA	0.75	0.95	0.75	0.95	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA	0.80	1.00	0.80	1.00	V
$V_{BE(SAT)}$	I_C=50mA, I_B=5.0mA	-	1.50	-	1.50	V
h_{FE}	V_{CE}=0.3V, I_C=10mA	30	120	30	120	
h_{FE}	V_{CE}=1.0V, I_C=50mA	20	-	20	-	
f_T	V_{CB}=0V, I_C=10mA, f=100MHz	300		300		MHz
f_T	V_{CE}=5.0V, I_C=10mA, f=100MHz	500		500		MHz
C_{ib}	V_{EB}=0.5V, I_C=0, f=140kHz		3.5		3.5	pF
C_{ob}	V_{CB}=0V, I_E=0, f=140kHz		5.5		5.5	pF
C_{ob}	V_{CB}=5.0V, I_E=0, f=140kHz		3.5		3.5	pF
t_{ON}	V_{CC}=1.5V, I_C=10mA, I_{B1}=0.5mA		60		60	ns
t_{ON}	V_{CC}=6.0V, I_C=50mA, I_{B1}=5.0mA		25		25	ns
t_{OFF}	V_{CC}=1.5V, I_C=10mA, I_{B1}=I_{B2}=0.5mA		60		75	ns
t_{OFF}	V_{CC}=6.0V, I_C=50mA, I_{B1}=I_{B2}=5.0mA		25		35	ns
τ_s	V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=10mA		30		50	ns