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Manufacturers of World Class Discrete Semiconductors

TN3724
TN3725

NPN SILICON SWITCHING TRANSISTOR

JEDEC TO-237 CASE (EBC)

DESCRIPTION

The CENTRAL SEMICONDUCTOR TN3724, TN3725 types are epoxy molded silicon NPN switching transistors manufactured by the epitaxial planar process designed for core driver and high speed switching applications.

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

	SYMBOL	TN3724	TN3725	UNIT
Collector-Base Voltage	V_{CBO}	50	80	V
Collector-Emitter Voltage	V_{CES}	50	80	V
Collector-Emitter Voltage	V_{CEO}	30	50	V
Emitter-Base Voltage	V_{EBO}	6.0		V
Collector Current	I_C	500		mA
Collector Current (peak)	I_{CM}	1.0		A
Power Dissipation	P_D	850		mW
Power Dissipation (T_C=25°C)	P_D	2.0		W
Operating and Storage Junction Temperature	T_J, T_{STG}	-65 TO +150		°C

ELECTRICAL CHARACTERISTICS (T_A=25°C)

		TN3724		TN3725		
SYMBOL	TEST CONDITIONS	MIN	MAX	MIN	MAX	UNIT
I_{CBO}	V_{CB}=40V		1.7		-	µA
I_{CBO}	V_{CB}=60V		-		1.7	µA
I_{CES}	V_{CE}=Rated V_{CEO}		10		10	µA
BV_{CBO}	I_C=10µA	50		80		V
BV_{CES}	I_C=10µA	50		80		V
BV_{CEO}	I_C=10mA	30		50		V
BV_{EBO}	I_E=10µA	6.0		6.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.25		0.25	V
$V_{CE(SAT)}$	I_C=100mA, I_B=10mA		0.20		0.26	V
$V_{CE(SAT)}$	I_C=300mA, I_B=30mA		0.32		0.40	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		0.42		0.52	V
$V_{CE(SAT)}$	I_C=800mA, I_B=80mA		0.65		0.80	V
$V_{CE(SAT)}$	I_C=1.0A, I_B=100mA		0.75		0.95	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA		0.76		0.76	V
$V_{BE(SAT)}$	I_C=100mA, I_B=10mA		0.86		0.86	V
$V_{BE(SAT)}$	I_C=300mA, I_B=30mA		1.1		1.1	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA	0.80	1.1	0.80	1.1	V
$V_{BE(SAT)}$	I_C=800mA, I_B=80mA		1.5		1.5	V
$V_{BE(SAT)}$	I_C=1.0A, I_B=100mA		1.7		1.7	V
h_{FE}	V_{CE}=1.0V, I_C=10mA	30		30		
h_{FE}	V_{CE}=1.0V, I_C=100mA	60	150	60	150	
h_{FE}	V_{CE}=1.0V, I_C=300mA	40		40		
h_{FE}	V_{CE}=1.0V, I_C=500mA	35		35		
h_{FE}	V_{CE}=2.0V, I_C=800mA	25		20		
h_{FE}	V_{CE}=5.0V, I_C=1.0A	30		25		
f_T	V_{CE}=10V, I_C=50mA, f=100MHz	300		300		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		12		10	pF
C_{ib}	V_{BE}=0.5V, I_C=0, f=1.0MHz		55		55	pF
t_{ON}	V_{CC}=30V, I_C=500mA, I_{B1}=50mA		35		35	ns
t_{OFF}	V_{CC}=30V, I_C=500mA, I_{B1}=I_{B2}=50mA		60		60	ns