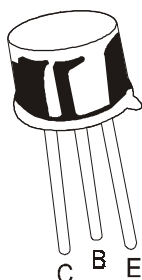


NPN HIGH VOLTAGE SILICON SWITCHING TRANSISTORS

2N3724

2N3725



TO-39

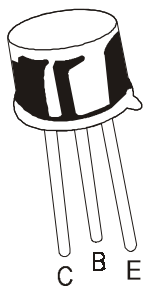
Metal Can Package

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	2N3724	2N3725	UNITS
Collector Emitter Voltage	V_{CEO}	30	50	V
Collector Base Voltage	V_{CBO}	50	80	V
Emitter Base Voltage	V_{EBO}	6.0		V
Collector Current - Continuous	I_C	1.0		A
Power Dissipation @ $T_A=25^\circ\text{C}$	P_D	1.0		W
Derate Above 25°C		5.71		mW/ $^\circ\text{C}$
Power Dissipation @ $T_C=25^\circ\text{C}$	P_D	5.0		W
Derate Above 25°C		28.6		mW/ $^\circ\text{C}$
Operating And Storage Junction Temperature Range	T_j, T_{stg}	- 65 to +200		$^\circ\text{C}$

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

DESCRIPTION	SYMBOL	TEST CONDITION	2N3724	2N3725	UNITS
Collector Emitter Voltage	V_{CEO}^*	$I_C=10\text{mA}, I_B=0$	>30	>50	V
Collector Emitter Voltage	V_{CES}	$I_C=10\mu\text{A}, V_{BE}=0$	>50	>80	V
Collector Base Voltage	V_{CBO}	$I_C=10\mu\text{A}, I_E=0$	>50	>80	V
Emitter Base Voltage	V_{EBO}	$I_E=10\mu\text{A}, I_C=0$	>6.0	>6.0	V
Collector Cut Off Current	I_{CBO}	$V_{CB}=40\text{V}, I_E=0$	<1.7	-	μA
		$V_{CB}=60\text{V}, I_E=0$	-	<1.7	μA
		$T_A=100^\circ\text{C}$	<120	-	μA
		$V_{CB}=40\text{V}, I_E=0$	-	<120	μA
Collector Cut Off Current	I_{CES}	$V_{CE}=50\text{V}, V_{EB}=0$	<10	-	μA
		$V_{CE}=80\text{V}, V_{EB}=0$	-	<10	μA
Base Current	I_B	$V_{CE}=50\text{V}, V_{EB}=0$	<10	-	μA
		$V_{CE}=80\text{V}, V_{EB}=0$	-	<10	μA



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Metal Can Package

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

DESCRIPTION	SYMBOL	TEST CONDITION	2N3724	2N3725	UNITS
DC Current Gain	h_{FE}^*	$I_C=10\text{mA}, V_{CE}=1\text{V}$	>30	>30	
		$I_C=100\text{mA}, V_{CE}=1\text{V}$	60 - 150	60 - 150	
		$I_C=300\text{mA}, V_{CE}=1\text{V}$	>40	>40	
		$I_C=500\text{mA}, V_{CE}=1\text{V}$	>35	>35	
		$I_C=800\text{mA}, V_{CE}=2\text{V}$	>25	>20	
		$I_C=1\text{A}, V_{CE}=5\text{V}$	>30	>25	
		$T_A = -55^\circ\text{C}$			
		$I_C=100\text{mA}, V_{CE}=1\text{V}$	>30	>30	
		$I_C=500\text{mA}, V_{CE}=1\text{V}$	>20	>20	
Collector Emitter Saturation Voltage	$V_{CE(\text{Sat})}^*$	$I_C=10\text{mA}, I_B=1\text{mA}$	<0.25	<0.25	V
		$I_C=100\text{mA}, I_B=10\text{mA}$	<0.20	<0.26	
		$I_C=300\text{mA}, I_B=30\text{mA}$	<0.32	<0.40	
		$I_C=500\text{mA}, I_B=50\text{mA}$	<0.42	<0.52	
		$I_C=800\text{mA}, I_B=80\text{mA}$	<0.65	<0.80	
		$I_C=1\text{A}, I_B=100\text{mA}$	<0.75	<0.95	
Base Emitter Saturation Voltage	$V_{BE(\text{Sat})}^*$	$I_C=10\text{mA}, I_B=1\text{mA}$	<0.76	<0.76	V
		$I_C=100\text{mA}, I_B=10\text{mA}$	<0.86	<0.86	
		$I_C=300\text{mA}, I_B=30\text{mA}$	<1.1	<1.1	
		$I_C=500\text{mA}, I_B=50\text{mA}$	0.8 - 1.1	0.8 - 1.1	
		$I_C=800\text{mA}, I_B=80\text{mA}$	<1.5	<1.5	
		$I_C=1\text{A}, I_B=100\text{mA}$	<1.7	<1.7	

SMALL SIGNAL CHARACTERISTICS

Current Gain Bandwidth Product	$f_{T^{**}}$	$I_C=50\text{mA}, V_{CE}=10\text{V}$ $f=100\text{MHz}$	>300	>300	MHz
Output Capacitance	C_{obo}	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$	<12	<10	pF
Input Capacitance	C_{ibo}	$V_{EB}=0.5\text{V}, I_C=0, f=1\text{MHz}$	<55	<55	pF

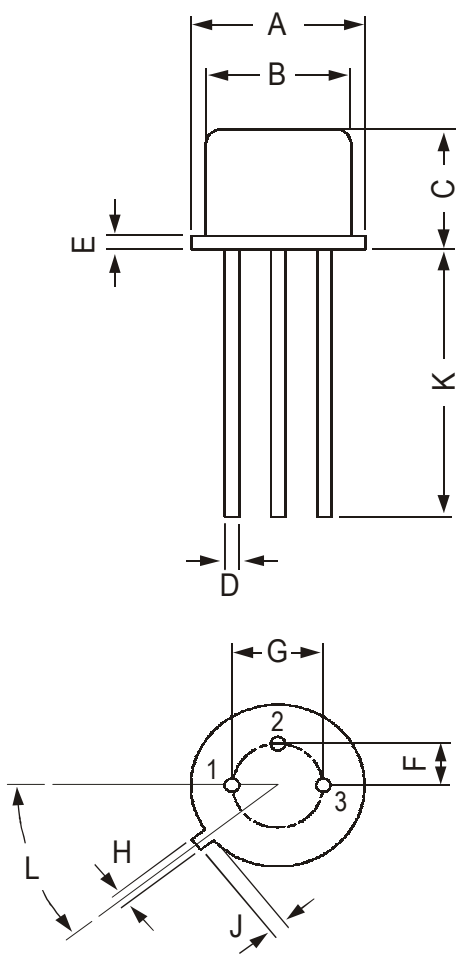
*Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 1\%$

** $f_T = |h_{fe}| \cdot f_{\text{test}}$

SWITCHING CHARACTERISTICS

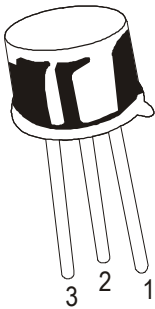
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNITS
Delay Time	t_d	$V_{CC}=30\text{V}, V_{BE}(\text{Off})=3.8\text{V}$	-	10	ns
Rise Time	t_r	$I_C=500\text{mA}, I_{B1}=50\text{mA}$	-	30	
Turn On Time	t_{on}		-	35	
Storage Time	t_s	$V_{CC}=30\text{V}, I_C=500\text{mA}$	-	50	ns
Fall Time	t_f	$I_{B1}=I_{B2}=50\text{mA}$	-	25	
Turn Off Time	t_{off}		-	60	

TO-39 Metal Can Package



All dimensions are in mm

DIM	MIN	MAX
A	8.50	9.39
B	7.74	8.50
C	6.09	6.60
D	0.40	0.53
E	—	0.88
F	2.41	2.66
G	4.82	5.33
H	0.71	0.86
J	0.73	1.02
K	12.70	—
L	42 DEG	48 DEG



PIN CONFIGURATION
1. EMITTER
2. BASE
3. COLLECTOR

Packing Detail

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-39	500 pcs/polybag	540 gm/500 pcs	3" x 7.5" x 7.5"	20K	17" x 15" x 13.5"	32K	40 kgs

Disclaimer

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