

TECHNICAL DATA
DATA SHEET 726, REV –
Formerly part number SHD4464

SMALL SIGNAL TRANSISTOR

DESCRIPTION: AN NPN SMALL SIGNAL TRANSISTOR IN A SURFACE CERAMIC LCC-4 PACKAGE.

MAXIMUM RATINGS

(ALL RATINGS ARE AT $T_A = 25^\circ\text{C}$ UNLESS OTHERWISE SPECIFIED).

RATING	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Collector-Emitter Voltage (V_{CE0})	-	-	-	150	Vdc
Collector-Base Voltage (V_{CBO})	-	-	-	150	Vdc
Emitter-Base Voltage (V_{EBO})	-	-	-	6.0	Vdc
Collector Current-Continuous (I_C)	-	-	-	300	mAdc
Total Power Dissipation ($P_D @ T_C = 25^\circ\text{C}$)	-	-	-	0.45	W
Derate above 25°C					mW/ $^\circ\text{C}$
Thermal Resist. Junction to Case $R_{\theta JC}$	-	-	-	285	$^\circ\text{C}/\text{W}$
Operating Junction and Storage Temp. (T_J & T_{stg})	-	-65	-	+150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS

(ALL ELECTRICAL CHARACTERISTICS $T_A = 25^\circ\text{C}$)

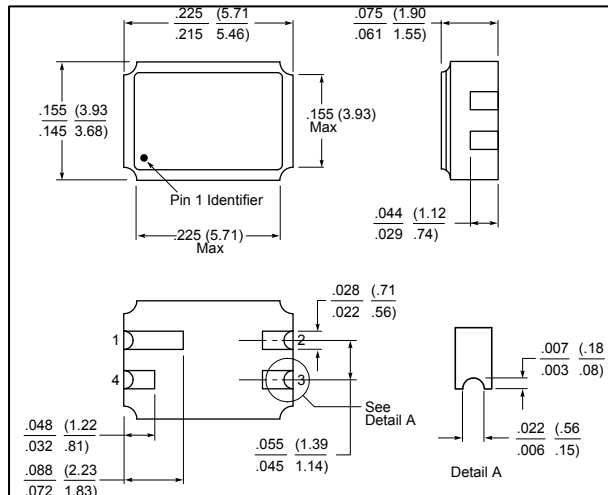
OFF CHARACTERISTICS						
Collector-Emitter Breakdown Voltage $V_{(BR)CEO(1)}$	$I_C = 10\text{mAdc}, I_B = 0$	150	-	-	Vdc	
Collector-Base Breakdown Voltage $V_{(BR)CBO}$	$I_C = 10\mu\text{Adc}, I_E = 0$	150	-	-	Vdc	
Emitter-Base Breakdown Voltage $V_{(BR)EBO}$	$I_E = 10\mu\text{Adc}, I_C = 0$	6.0	-	-	Vdc	
Collector Cutoff Current (I_{CBO})	$V_{CB} = 75\text{Vdc}, I_E = 0$	-	-	0.05	μAdc	
		-	-	50	μAdc	
$T_A = 150^\circ\text{C}$						
Emitter Cutoff Current (I_{EBO})	$V_{EB} = 4.0\text{Vdc}, I_C = 0$	-	-	25	nAdc	
ON CHARACTERISTICS						
DC Current Gain (h_{FE}) $(V_{CE} = 10\text{Vdc})$	$I_C = 0.1\text{ mAdc}$	35	-		-	
	$I_C = 1.0\text{ mAdc}$	50				
	$I_C = 10\text{ mAdc (1)}$	75				
	$I_C = 150\text{ mAdc (1)}$	100		300		
	$I_C = 300\text{ mAdc (1)}$	20				
SMALL-SIGNAL CHARACTERISTICS						
Current Gain, Bandwidth (2) (f_T)	$V_{CE} = 20\text{Vdc}, I_C = 20\text{mAdc},$ $f = 100\text{MHz}$	150	-	-	MHz	
Output Capacitance (C_{obo})	$V_{CB} = 10\text{Vdc}, I_E = 0,$ $f = 1.0\text{ MHz}$	-	-	8.0	pF	

RATING	CONDITIONS	MIN.	TYP.	MAX.	UNITS
SMALL-SIGNAL CHARACTERISTICS (Contiued)					
Input Capacitance (C_{ibo})	$V_{EB} = 0.5 \text{ Vdc}$, $I_C = 0$, $f = 1.0 \text{ MHz}$	-	-	80	pF
Delay Time (t_d)	$(I_C = 150 \text{ mAdc}$, $I_{B1} = 15 \text{ mAdc}$, $V_{CC} = 100\text{Vdc}$, $V_{BE(off)} = -2.0\text{Vdc}$)	-	20	-	ns
Rise Time (t_r)	$(I_C = 150 \text{ mAdc}$, $I_{B1} = 15 \text{ mAdc}$, $V_{CC} = 100\text{Vdc}$, $V_{BE(off)} = -2.0\text{Vdc}$)	-	35	-	ns
Storage Time (t_s)	$(I_C = 150 \text{ mAdc}$, $I_{B1} = I_{B2} = 15 \text{ mAdc}$, $V_{CC} = 100\text{Vdc}$)	-	800	-	ns
Fall Time (t_f)	$(I_C = 150 \text{ mAdc}$, $I_{B1} = I_{B2} = 15 \text{ mAdc}$, $V_{CC} = 100\text{Vdc}$)	-	80	-	ns

(1) Pulsed. Pulse Width $\leq 300 \mu\text{s}$, Duty Cycle $\leq 2.0\%$.

(2) $f_T = |h_{fe}| \cdot f_{test}$

MECHANICAL DIMENSIONS - in inches / mm



PIN 1 - COLLECTOR 1
 PIN 2 - EMITTER
 PIN 3 - BASE
 PIN 4 - NO CONNECTION

LCC-4

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