DIGITRON™ Semiconductors

High-reliability discrete products
and engineering services since 1977

2N3762-2N3765

PNP SWITCHING SILICON TRANSISTORS

FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

MAXIMUM RATINGS

Ratings	Symbol	2N3762 2N3764	2N3763 2N3765	Unit
Collector emitter voltage	V_{CEO}	40	60	Vdc
Collector base voltage	V_{CBO}	40	60	Vdc
Emitter base voltage	V_{EBO}	5.0		Vdc
Collector current	I_C	1.5		Adc
Total power dissipation @ T_A = 25°C	P_T	1.0	0.5	W
Operating and storage temperature range	T_{op}, T_{stg}	-55 to +200		°C
Maximum Thermal resistance junction to case	$R_{\theta JC}$	60	88	°C/W

1. Derate linearly at 5.714 mW/°C for T_A = > 25°C
2. Derate linearly at 2.86 mW/°C for T_A > 25°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector emitter breakdown current					
(I_C = 10mAdc)	2N3762, 2N3764	$V_{(BR)CEO}$	40		Vdc
	2N3763, 2N3765		60		
Collector base cutoff current					
(V_{CB} = 20Vdc)	2N3762, 2N3764			100	
(V_{CB} = 30Vdc)	2N3763, 2N3765	ICBO		100	ηAdc
(V_{CB} = 40Vdc)	2N3762, 2N3764			10	µAdc
(V_{CB} = 60Vdc)	2N3763, 2N3765			10	
Collector emitter cutoff current					
(V_{EB} = 2.0Vdc, V_{CE} = 20Vdc)	2N3762, 2N3764	ICEX		100	ηAdc
(V_{EB} = 2.0Vdc, V_{CE} = 30Vdc)	2N3763, 2N3765			100	
Emitter base cutoff current					
(V_{EB} = 2.0Vdc)	All types	IEBO		200	ηAdc
(V_{EB} = 5.0Vdc)	2N3762, 2N3764			10	µAdc
	2N3763, 2N3765			10	
ON CHARACTERISTICS [3]					
Forward current transfer ratio					
(I_C = 10mAdc, V_{CE} = 1.0Vdc)			35		
(I_C = 150mAdc, V_{CE} = 1.0Vdc)			40		
(I_C = 500mAdc, V_{CE} = 1.0Vdc)			40	140	
(I_C = 1.0Adc, V_{CE} = 1.5Vdc)	2N3762, 2N3764	h_{FE}	30	120	
	2N3763, 2N3765		20	80	
(I_C = 1.5Adc, V_{CE} = 5.0Vdc)	2N3762, 2N3764		30		
	2N3763, 2N3765		20		

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Characteristic		Symbol	Min	Max	Unit
Collector emitter saturation voltage					
(I_C = 10mAdc, I_B = 1.0mAdc)				0.1	
(I_C = 150mAdc, I_B = 15mAdc)		$V_{CE(sat)}$		0.22	Vdc
(I_C = 500mAdc, I_B = 50mAdc)				0.5	
(I_C = 1.0mAdc, I_B = 100mAdc)				0.9	
Base emitter saturation voltage					
(I_C = 10mAdc, I_B = 1.0mAdc)				0.8	
(I_C = 150mAdc, I_B = 15mAdc)		$V_{BE(sat)}$		1.0	Vdc
(I_C = 500mAdc, I_B = 50mAdc)				1.2	
(I_C = 1.0mAdc, I_B = 100mAdc)			0.9	1.4	
DYNAMIC CHARACTERISTICS					
Forward current transfer ratio, magnitude					
(I_C = 50mAdc, V_{CE} = 10Vdc, f = 100MHz)	2N3762, 2N3764	$\|h_{fe}\|$	1.8	6.0	
	2N3763, 2N3765		1.5	6.0	
Output capacitance					
(V_{CB} = 10Vdc, I_E = 0, 100kHz ≤ f ≤ 1.0MHz)		C_{obo}		25	pF
Input capacitance					
(V_{CB} = 0.5Vdc, I_C = 0, 100kHz ≤ f ≤ 1.0MHz)		Cibo		80	pF
SWITCHING CHARACTERISTICS					
Delay time	**V_{CC} = 30Vdc, V_{EB} = 0,**	t_d		8.0	ŋs
Rise time	**I_C = 1.0mAdc, I_{B1} = 100mAdc**	t_r		35	ŋs
Storage time	**V_{CC} = 30Vdc, V_{EB} = 0,**	t_s		80	ŋs
Fall time	**I_C = 1.0mAdc, I_{B1} = 100mAdc**	t_f		35	ŋs

1. Pulse test: pulse width = 300µs, duty cycle ≤ 2.0%.

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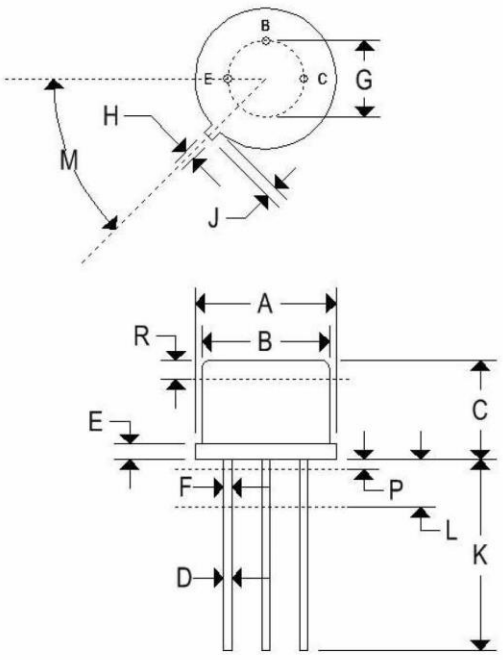
MECHANICAL CHARACTERISTICS

Case:	TO-39 (2N3762-2N3763)
Marking:	Alpha-Numeric
Polarity:	See Below



	TO-39			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.350	0.370	8.890	9.400
B	0.315	0.335	8.000	8.510
C	0.240	0.260	6.10	6.60
D	0.016	0.021	0.406	0.533
E	0.009	0.125	0.2269	3.180
F	0.016	0.019	0.406	0.533
G	0.190	0.210	4.830	5.33
H	0.028	0.034	0.711	0.864
J	0.029	0.040	0.737	1.020
K	0.500	-	12.700	-
L	0.250	-	6.350	-
M	45° NOM		45° NOM	
P	-	0.050	-	1.270
Q	90° NOM		90° NOM	
R	0.100	-	2.540	-

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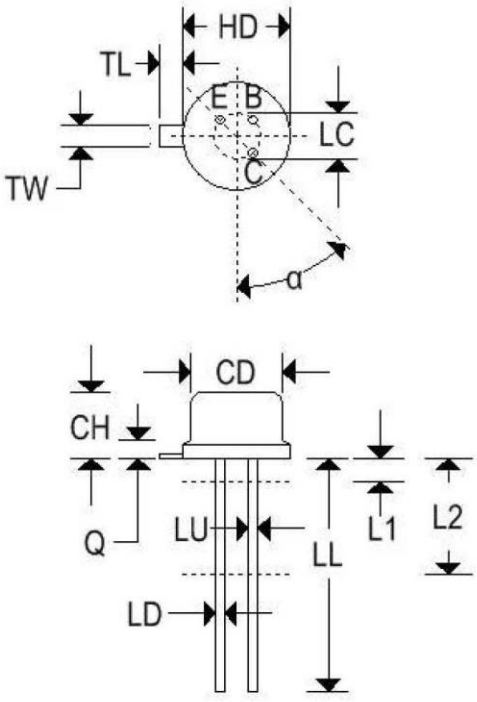
MECHANICAL CHARACTERISTICS

Case:	TO-46 (2N3764-2N3765)
Marking:	Alpha-Numeric
Polarity:	See Below



	TO-46			
	Inches		Millimeters	
	Min	Max	Min	Max
CD	0.178	0.195	4.520	4.950
CH	0.065	0.085	1.650	2.160
HD	0.209	0.230	5.310	5.840
LC	0.100 TP		2.540 TP	
LD	0.016	0.021	0.410	0.530
LL	0.500	1.750	12.700	44.450
LU	0.016	0.019	0.041	0.048
L1	-	0.050	-	1.270
L2	0.250	-	6.350	-
Q	-	0.040	-	1.020
TL	0.028	0.048	0.710	1.220
TW	0.036	0.046	0.910	1.170
α	45° TP		45° TP	