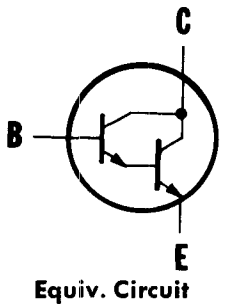
Silicon Power Tab
Monolithic Transistor
Very High Gain Darlington Amplifier
"Color Molded"

NPN
D40K



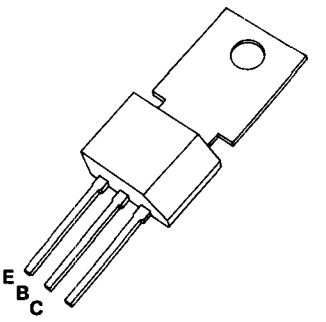
Equiv. Circuit

NPN Complement To D41K
h_{FE} Min. — 10,000
1.67 Watt Free-Air Power Dissipation

TYPICAL APPLICATIONS:

Driver	Audio Output
Regulator	Relay Substitute
Touch Switch	Oscillator
I.C. Driver	Servo-Amplifier

Capacitor Multiplier



Leads Can Be Formed To A TO-5 Pin Configuration

absolute maximum ratings: (25°C) (unless otherwise specified)

	Symbol	D40K1, 3	D40K2, 4	Units
Voltages				
Collector to Emitter	V_{CEO}	30	50	Volts
Emitter to Base	V_{EBO}	13	13	Volts
Collector to Emitter	V_{CES}	30	50	Volts
Current(2)				
Collector (Continuous)	I_C	2		Amps
Collector (Peak) (50% duty cycle, 25 msec. pulse width)		3		Amps
Power Dissipation(2)				
Tab at 25°C(3)	P_T	10		Watts
Tab at 70°C		6		Watts
Free Air at 25°C				
With Tab		1.67		Watts
Without Tab		1.25		Watts
Free Air at 50°C				
With Tab		1.33		Watts
Without Tab		1.0		Watts
Thermal Resistance(3)				
Junction to Case	$R_{\theta JC}$	12.5		°C/W
Junction to Ambient	$R_{\theta JA}$			
With Tab		75		°C/W
Without Tab		100		°C/W
Temperature(3)				
Operating	T_J	-55 to +150		°C
Storage	T_{STG}	-55 to +150		°C
Lead Soldering, $\frac{1}{16}$" ± $\frac{1}{32}$" from case for 10 sec max	T_L	+260		°C

NOTES:

(1)The last digit is a part number which designates a voltage grade and an h_{FE} level. Tab and lead forming is specified by a letter after this digit.
(2)Please refer to the safe region of operation curves for more information.
(3)Tab temperature is measured on center of tab, $\frac{1}{16}$" from plastic body.

D40K

electrical characteristics: (25°C) (unless otherwise specified)

		D40K1, 3 D40K2, 4			
Forward Current Transfer Ratio		**Min.**			
(I_C = 200 mA, V_{CE} = 5V)	h_{FE}	10K			
(I_C = 1.5A, V_{CE} = 5V)		1K			
(I_C = 1.0A, V_{CE} = 5V)		1K			
		Min.	**Typ.**	**Max.**	
Collector to Emitter Voltage					
(I_C = 10 mA) D40K1, 3	V_{CEO}	30	—	—	Volts
D40K2, 4		50	—	—	Volts
Collector Saturation Voltage(4)					
(I_C = 1.5A, I_B = 3mA) D40K1, 2	$V_{CE(SAT)}$	—	—	1.5	Volts
(I_C = 1.0A, I_B = 2mA) D40K3, 4		–	–	1.5	Volts
Base Saturation Voltage(4)					
(I_C = 1.5A, I_B = 3mA) D40K1, 2	$V_{BE(SAT)}$	—	—	2.5	Volts
(I_C = 1.0A, I_B = 2mA) D40K3, 4		–	–	2.5	Volts
Collector Cutoff Current					
(V_{CE} = Rated V_{CES}, T_J = 25°C)	I_{CES}	—	—	0.5	μA
(V_{CE} = Rated V_{CES}, T_J = 150°C)	I_{CBO}	—	—	20	μA
Emitter Cutoff Current					
(V_{EB} = 13V)	I_{EBO}	—	—	0.1	μA
Collector Capacitance					
(V_{CB} = 10V, f = 1 MHz)	C_{CBO}	—	5	10	pF
Gain Bandwidth Product					
(V_{CE} = 5V, I_C = 20 mA)	f_T	—	75	—	MHz

NOTE:

(4)Pulsed measurement, 300 μsec pulse width, duty cycle ≦2%.

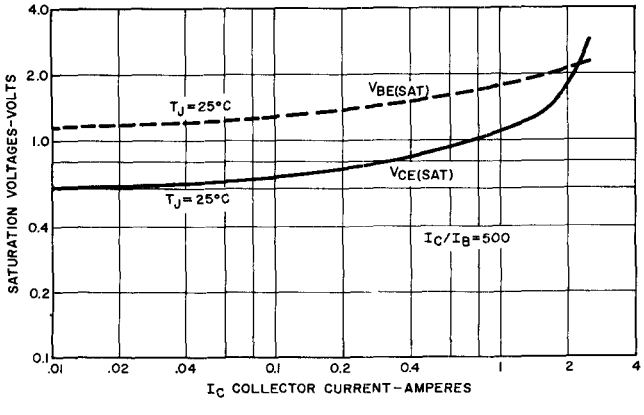


Figure 1

TYPICAL SATURATION VOLTAGE

Figure 2

TYPICAL h_{FE} vs. I_C

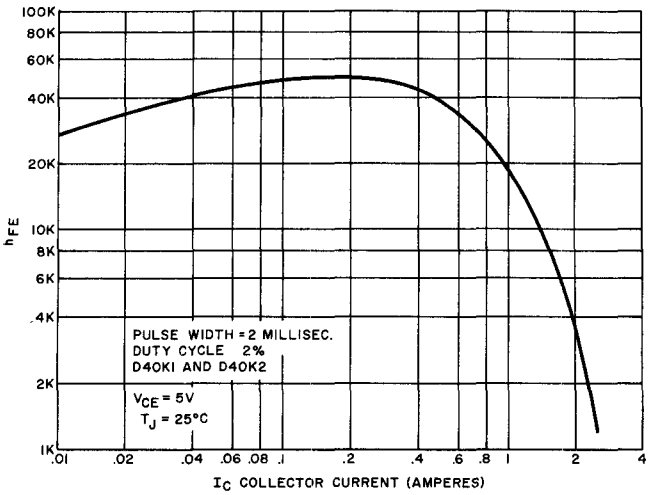
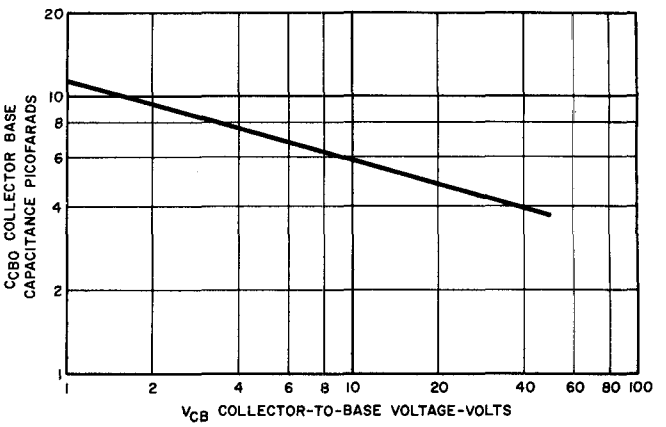
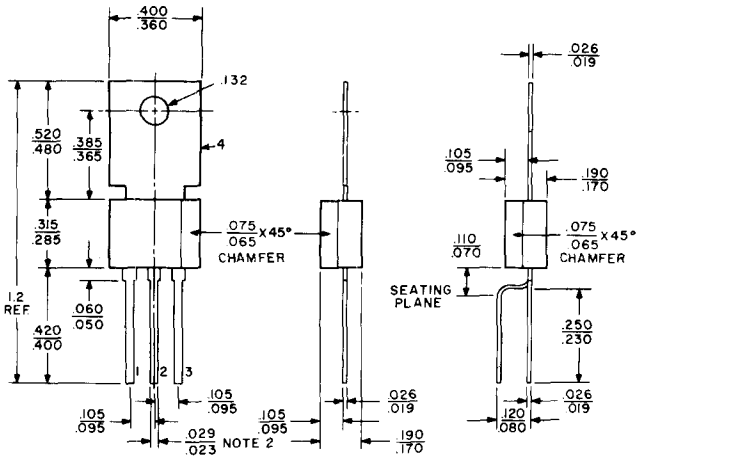


Figure 3

TYPICAL C_{CBO} vs. VOLTAGE



DIMENSIONAL OUTLINES

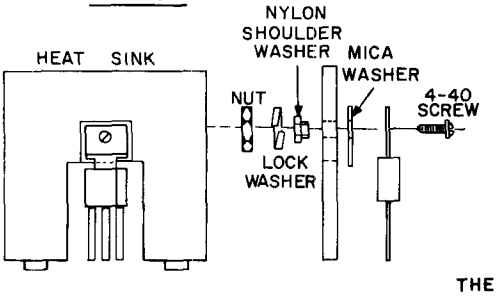


TYPE U
LEAD LABELS
1. EMITTER
2. BASE
3. COLLECTOR

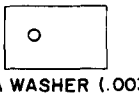
NOTES:
1. ALL DIM. ARE IN INCHES AND ARE REF. UNLESS TOLERANCED.
2. .043-.057 LEAD WIDTH WITHIN 0.100 OF BODY.

TYPE U
FITS TO-5 PRINTED CIRCUIT BOARD MOUNTING CONFIGURATION

TYPICAL INSULATING MOUNTING



INSUALTING KIT



MICA WASHER (.003 THICK)

NYLON SHOULDER WASHER

THE ABOVE PARTS WILL BE AVAILABLE UPON REQUEST AS A SEPARATE KIT AT AN ADDITIONAL COST. KIT #1388B189P11

NOTE: THE THERMAL RESISTANCE TAB TO HEAT SINK WITH THE MICA WASHER IS APPROXIMATELY 7.5°C/W WITHOUT ANY THERMAL CONDUCTING COMPOUND AND ABOUT 3.75°C/W WITH A THERMAL CONDUCTING GREASE.