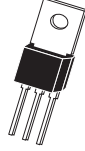


**D40K SERIES**  
**NPN SILICON DARLINGTON**  
**POWER TRANSISTOR**



**TO-202 CASE**

# Central<sup>TM</sup>

**Semiconductor Corp.**

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR D40K Series types are NPN Silicon Darlington Power Transistors designed for general purpose amplifier applications where high gain is required.

**MARKING: FULL PART NUMBER**

**MAXIMUM RATINGS:** ( $T_A=25^\circ\text{C}$ )

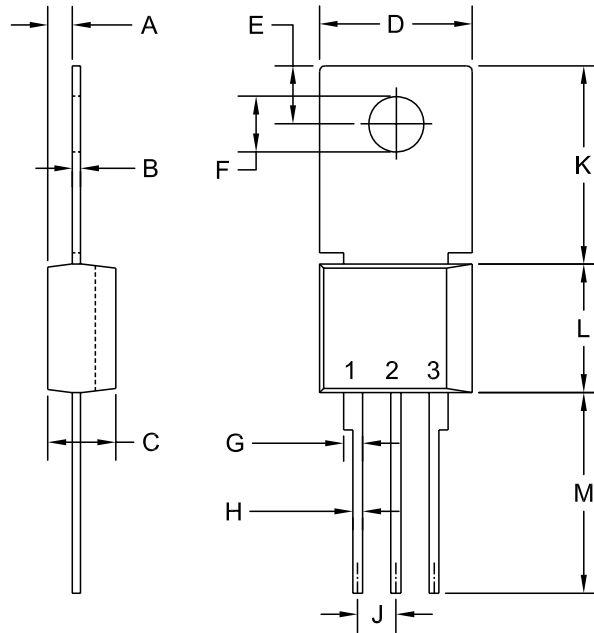
Collector-Emitter Voltage
Collector-Emitter Voltage
Emitter-Base Voltage
Continuous Collector Current
Peak Collector Current
Base Current
Power Dissipation
Power Dissipation ( $T_C=25^\circ\text{C}$ )
Operating and Storage Junction Temperature
Thermal Resistance
Thermal Resistance

SYMBOL	<u>D40K1.3</u>	<u>D40K2.4</u>	UNITS
$V_{CEO}$	30	50	V
$V_{CES}$	30	50	V
$V_{EBO}$		13	V
$I_C$		2.0	A
$I_{CM}$		3.0	A
$I_B$		0.2	A
$P_D$		1.67	W
$P_D$		10	W
$T_J, T_{stg}$		-65 to +150	$^\circ\text{C}$
$\theta_{JA}$		75	$^\circ\text{C/W}$
$\theta_{JC}$		12.5	$^\circ\text{C/W}$

**ELECTRICAL CHARACTERISTICS:** ( $T_C=25^\circ\text{C}$  unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$I_{CES}$	$V_{CE}=\text{Rated } V_{CE}$			500	nA
$I_{EBO}$	$V_{EB}=13\text{V}$			100	nA
$BV_{CEO}$	$I_C=10\text{mA}$ (D40K1, 3)	30			V
$BV_{CEO}$	$I_C=10\text{mA}$ (D40K2, 4)	50			V
$V_{CE(SAT)}$	$I_C=1.5\text{A}, I_B=3.0\text{mA}$ (D40K1, 2)			1.5	V
$V_{CE(SAT)}$	$I_C=1.0\text{A}, I_B=2.0\text{mA}$ (D40K3, 4)			1.5	V
$V_{BE(SAT)}$	$I_C=1.5\text{A}, I_B=3.0\text{mA}$ (D40K1, 2)			2.5	V
$V_{BE(SAT)}$	$I_C=1.0\text{A}, I_B=2.0\text{mA}$ (D40K3, 4)			2.5	V
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=200\text{mA}$	10K			
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=1.5\text{A}$ (D40K1, 2)	1K			
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=1.0\text{A}$ (D40K3, 4)	1K			
$C_{cb}$	$V_{CB}=10\text{V}, f=1.0\text{MHz}$			10	pF
$f_T$	$V_{CE}=5.0\text{V}, I_C=20\text{mA}$		75		MHz

TO-202 CASE - MECHANICAL OUTLINE



R1

DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.055	0.071	1.40	1.80
B	0.016	0.024	0.40	0.60
C	0.173	0.181	4.40	4.60
D	0.374	0.413	9.50	10.50
E	0.146	0.154	3.70	3.90
F (DIA)	0.142	0.150	3.60	3.80
G	0.039	0.055	1.00	1.40
H	0.024	0.031	0.60	0.80
J	0.094	0.106	2.39	2.69
K	0.492	0.551	12.50	14.00
L	0.327	0.346	8.30	8.80
M	0.492	0.531	12.50	13.50

**LEAD CODE:**

- 1) EMITTER
- 2) BASE
- 3) COLLECTOR

Note: Tab is common to lead 3.

**MARKING:**

**FULL PART NUMBER**

TO-202 (REV: R1)

R0 (28-March 2008)