

**D40C7**  
**NPN SILICON**  
**DARLINGTON POWER**  
**TRANSISTOR**



**TO-202 CASE**

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR D40C7 type is an NPN silicon Darlington power transistor designed for general purpose amplifier applications where high gain is required.

**MARKING: FULL PART NUMBER**

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

Collector-Emitter Voltage	$V_{CES}$	50	V
Collector-Emitter Voltage	$V_{CEO}$	50	V
Emitter-Base Voltage	$V_{EBO}$	13	V
Continuous Collector Current	$I_C$	0.5	A
Peak Collector Current	$I_{CM}$	1.0	A
Power Dissipation	$P_D$	6.25	W
Operating and Storage Junction Temperature	$T_J, T_{stg}$	-55 to +150	$^\circ\text{C}$
Thermal Resistance	$\theta_{JC}$	20	$^\circ\text{C}/\text{W}$

**SYMBOL**

$V_{CES}$	50	V
$V_{CEO}$	50	V
$V_{EBO}$	13	V
$I_C$	0.5	A
$I_{CM}$	1.0	A
$P_D$	6.25	W
$T_J, T_{stg}$	-55 to +150	$^\circ\text{C}$
$\theta_{JC}$	20	$^\circ\text{C}/\text{W}$

**UNITS**

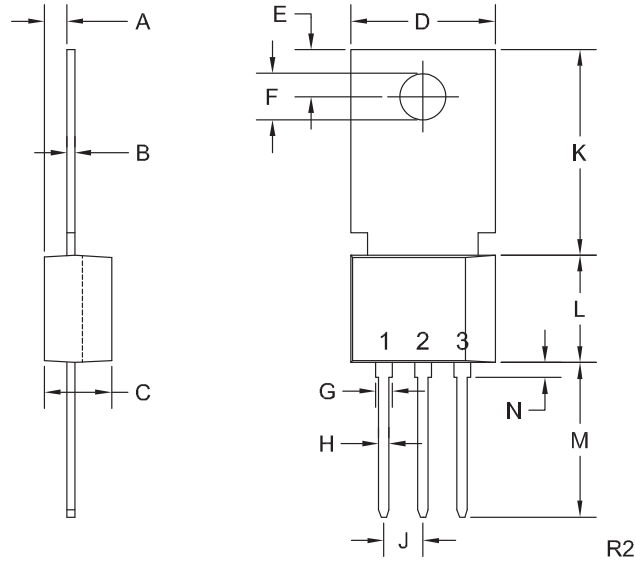
**ELECTRICAL CHARACTERISTICS:** ( $T_C=25^\circ\text{C}$  unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$I_{CES}$	$V_{CE}=50\text{V}$			500	nA
$I_{CBO}$	$V_{CE}=50\text{V}, T_C=150^\circ\text{C}$			20	$\mu\text{A}$
$I_{EBO}$	$V_{EB}=13\text{V}$			100	nA
$BV_{CEO}$	$I_C=10\text{mA}$	50			V
$V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=0.5\text{mA}$			1.5	V
$V_{BE(SAT)}$	$I_C=500\text{mA}, I_B=0.5\text{mA}$			2.0	V
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=200\text{mA}$	10K		70K	
$f_T$	$V_{CE}=5.0\text{V}, I_C=20\text{mA}$		80		MHz
$C_{cb}$	$V_{CB}=10\text{V}, f=1.0\text{MHz}$			10	pF
$t_{on}$	$I_C=1.0\text{A}, I_{B1}=1.0\text{mA}$		120		ns
$t_{off}$	$I_C=1.0\text{A}, I_{B1}=I_{B2}=1.0\text{mA}$		1200		ns

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**TO-202 CASE - MECHANICAL OUTLINE**



**LEAD CODE:**  
 1) Emitter  
 2) Base  
 3) Collector  
 Tab is common to pin 3

**MARKING:**  
**FULL PART NUMBER**

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	10.5
E	0.118	0.154	3.00	3.90
F (DIA)	0.124	0.150	3.15	3.80
G	0.035	0.055	0.90	1.40
H	0.023	0.031	0.59	0.80
J	0.094	0.106	2.39	2.69
K	0.459	0.559	11.66	14.21
L	0.280	0.346	7.12	8.80
M	0.406	0.531	10.3	13.5
N	0.024	0.059	0.60	1.50

TO-202 (REV: R2)

R2 (23-January 2012)