MJ15024;ON;TO3;tranzystor; NPN;16A;250V;250W;4MHz;Pbf

Dane techniczne:
Nazwa: MJ15004
Typ tranzystora: bipolarny
Kierunek przewodnictwa: NPN
Prąd kolektora: 16A
Napięcie kolektor-emiter: 250V
Moc: 250W
Częstotliwość: 4MHz
Montaż: przewlekany(THT)
Obudowa: TO3
Producent: ON

Transistor, NPN
TO-3

Description:

The MJ15024 powerbase power transistors designed for high power audio, disk head positioners and other linear applications.

Features:

- High safe operating area (100% tested) - 2A at 80V
- High DC current gain - h_{FE} = 15 (min.) at I_C = 8A DC
- Pb-free packages

Mamimum Ratings

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	250	V DC
Collector-Base Voltage	V_{CBO}	400	
Emitter-Base Voltage	V_{EBO}	5	
Collector-Emitter Voltage	V_{CEX}	400	A DC
Collector Current-Continuous -Peak (Note 1)	I_C	16 30	
Base Current-Continuous	I_B	5	
Total Power Dissipation at T_C = 25°C Derate above 25°C	P_D	250 1.43	W W/°C
Operating and Storage Junction Temperature Range	T_J, T_{Stg}	-65 to +200	°C

Thermal Characteristics

Characteristic	Symbol	Max.	Unit
Thermal Resistance Junction to Case	$R_{\theta JC}$	0.70	°C/W

Max. ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

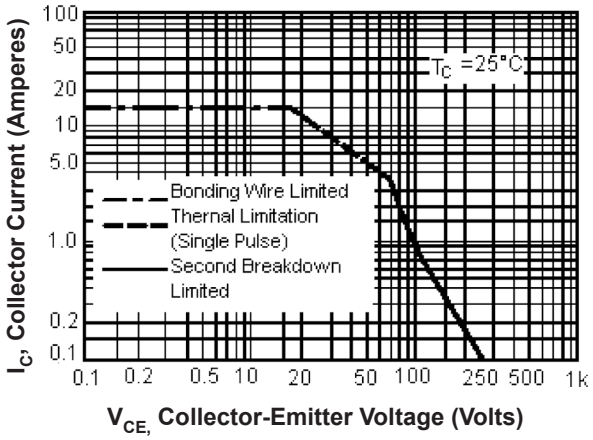
1. Pulse test: pulse width = 5ms, duty cycle ≤10%.

Electrical Characteristics (T_C = 25°C unless otherwise noted)

Characteristic	Symbol	Min.	Max.	Unit
Off Characteristics				
Collector-Emitter Sustaining Voltage (Note 2) (I_C = 100mA DC, I_B = 0)	$V_{EO\ (sus)}$	250	-	-
Collector Cut off Current (V_{CE} = 250V DC, $V_{BE\ (off)}$ = 1.5V DC)	I_{CEX}	-	250	µA DC
Collector Cut off Current (V_{CE} = 200V DC, I_B = 0)	I_{CEO}	-	500	
Emitter Cut off Current (V_{CE} = 5V DC I_B = 0)	I_{EBO}	-		
Second Breakdown				
Second Breakdown Collector Current with Base Forward Biased (V_{CE} = 50V DC, t = 0.5s (Non-repetitive)) (V_{CE} = 80V DC, t = 0.5s (non-repetitive))	$I_{S/b}$	5 2	-	A DC
On Characteristic				
DC Current Gain (I_C = 8A DC, V_{CE} = 4V DC) (I_C = 16A DC, V_{CE} = 4V DC)	h_{FE}	15 5	60 -	-
Collector-Emitter Saturation Voltage (I_C = 8A DC, I_B = 0.8A DC) (I_C = 16A DC, I_B = 3.2A DC)	$V_{CE\ (sat)}$	-	1.4 4	V DC
Base-Emitter On Voltage (I_C = 8A DC, V_{CE} = 4V DC)	$V_{BE\ (on)}$	-	2.2	
Dynamic Characteristics				
Current-Gain - Bandwidth Product (I_C = 1A DC, V_{CE} = 10V DC, f_{test} = 1MHz)	f_T	4	-	MHz
Output Capacitance (V_{CB} = 10V DC, I_E = 0, f_{test} = 1MHz)	C_{ob}	-	500	pF

2. Pulse Test : Pulse Width = 300µs, Duty Cycle ≤2%.

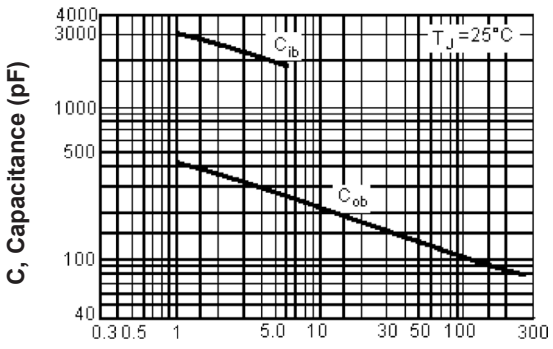
Active - Region Safe Operating Area



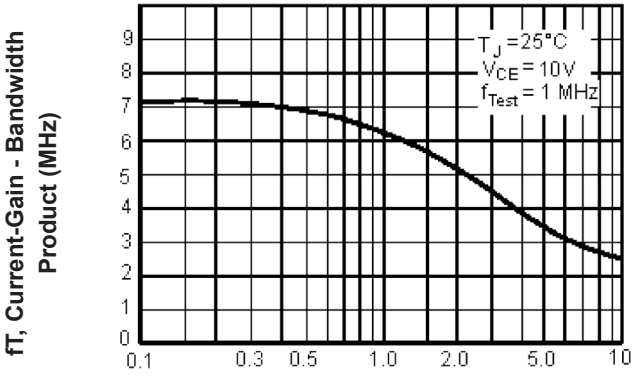
There are two limitation on the power handling ability of a transistor: average junction temperature and second breakdown. Safe operating area curves indicate I_C - V_{CE} limits of the transistor that must be observed for reliable operation; i.e., the transistor must not be subjected to greater dissipation than curves indicate. The data is based on $T_{J\ (PK)}$ = 200°C; TC is variable depending on conditions. At high case temperatures, thermal limitations will reduce the power that can be handled to values lon than the limitations imposed by second breakdown.

Typical Characteristics

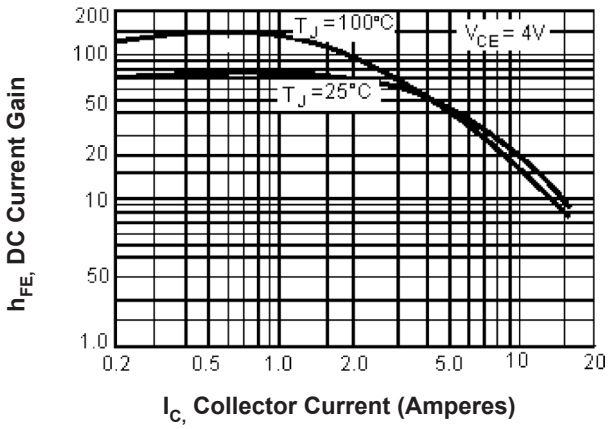
Capacitances



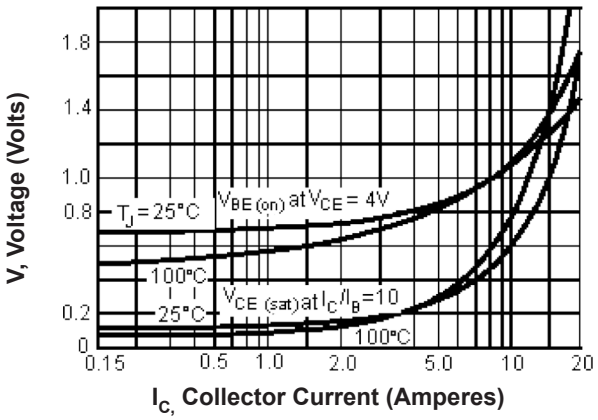
Current-Gain - Bandwidth Product



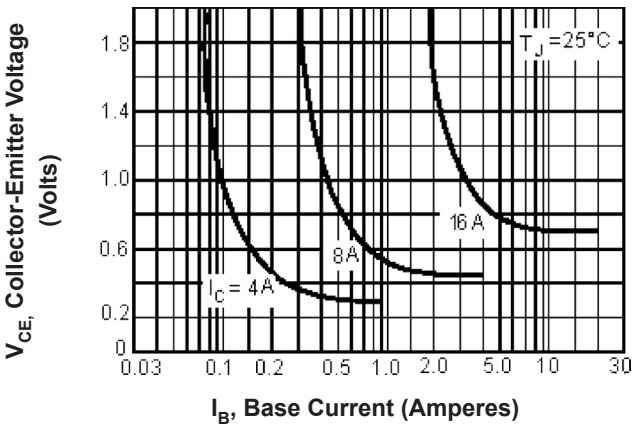
DC Current Gain



"On" Voltage

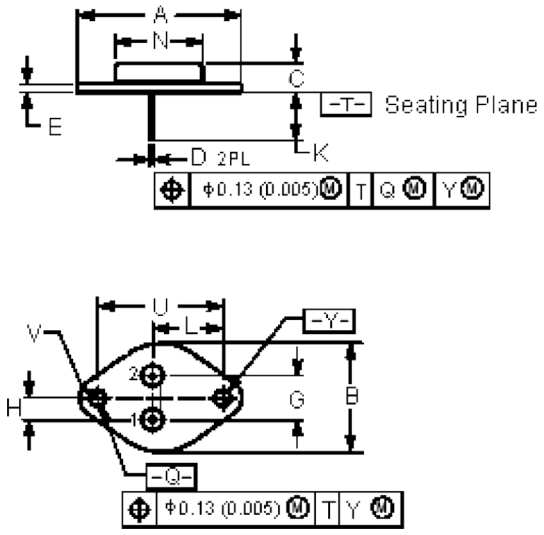


Collector Saturation Region



Transistor, NPN
TO-3

Dimensions:



Dimensions	Min.	Max.
A	1.55 (39.37) Reference	
B	-	1.05 (26.67)
C	0.25 (6.35)	0.335 (8.51)
D	0.038 (0.97)	0.043 (1.09)
E	0.055 (1.4)	0.07 (1.77)
G	0.43 (10.92) BSC	
H	0.215 (5.46) BSC	
K	0.44 (11.18)	0.48 (12.19)
L	0.665 (16.89) BSC	
N	-	0.83 (21.08)
Q	0.151 (3.84)	0.165 (4.19)
U	1.187 (30.15) BSC	
V	0.131 (3.33)	0.188 (4.77)

Dimensions : Inches (Millimetres)

Pin Configuration

Pin 1. Base
2. Emitter
Collector (Case)

Part Number Table

Description	Part Number
Transistor, NPN, TO-3	MJ15024