MOSPEC

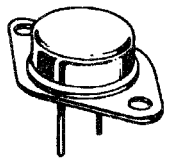
SILICON POWER TRANSISTORS

The MJ15022 and MJ15024 are power base power transistors designed for high power audio,disk head positioners and other linear applications.

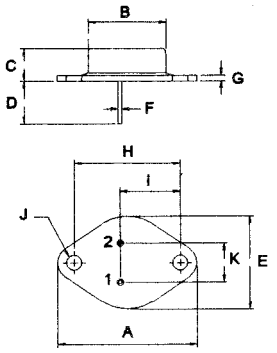
NPN
MJ15022
MJ15024

16 AMPERE
SILICON POWER
TRANSISTORS
200 - 250 VOLTS
250 WATTS

FEATURES
* High Safe Operating Area
* High DC Current Gain-
  h_{FE}= 15(Min)@I_C= 8.0 A V_{CE}=4.0 V



TO-3



PIN 1.BASE
2.EMITTER
COLLECTOR(CASE)

DIM	MILLIMETERS	
	MIN	MAX
A	38.75	39.96
B	19.28	22.23
C	7.96	9.28
D	11.18	12.19
E	25.20	26.67
F	0.92	1.09
G	1.38	1.62
H	29.90	30.40
I	16.64	17.30
J	3.88	4.36
K	10.67	11.18

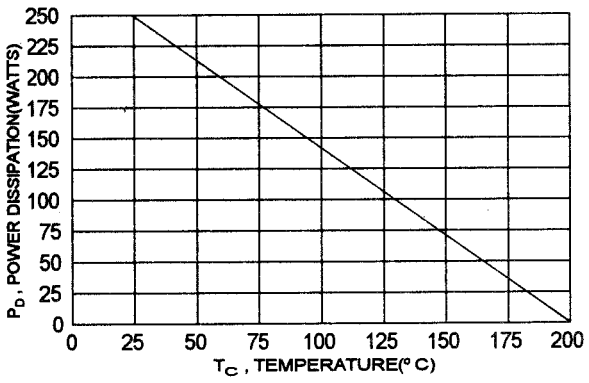
MAXIMUM RATINGS

Characteristic	Symbol	MJ15022	MJ15024	Unit
Collector-Emitter Voltage	V_{CEO}	200	250	V
Collector-Base Voltage	V_{CBO}	350	400	V
Emitter-Base Voltage	V_{EBO}	5.0		V
Collector-Emitter Voltage	V_{CEX}	400		V
Collector Current - Continuous - Peak	I_C I_{CM}	16 30		A
Base Current-Continuous	I_B	5		A
Total Power Dissipation @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 ResistanceJunction to Case	Rθjc	0.7	°C/W

FIGURE -1 POWER DERATING



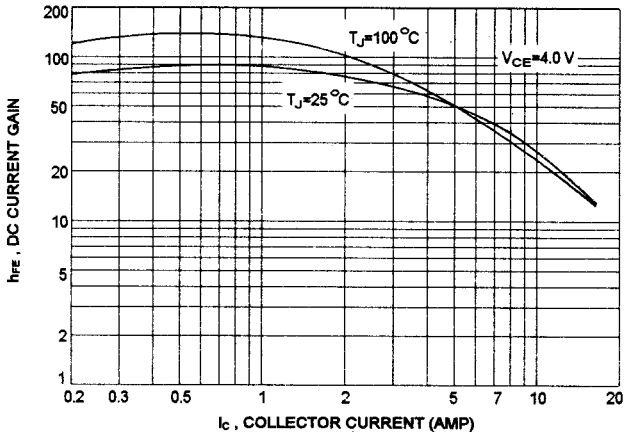
ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Sustaining Voltage(1) (I_C= 100 mA, I_B= 0)	MJ15022 MJ15024	$V_{CEO\ (sus)}$	200 250		V
Collector Cutoff Current (V_{CE}= 200 V , $V_{BE(off)}$= 1.5 V) (V_{CE}= 250 V , $V_{BE(off)}$= 1.5 V)	 MJ15022 MJ15024	I_{CEX}		 250 250	uA
Collector Cutoff Current (V_{CE}= 150 V, I_B= 0) (V_{CE}= 200 V, I_B= 0)	 MJ15022 MJ15024	I_{CEO}		 500 500	uA
Emitter Cutoff Current (V_{EB}= 5.0 V, I_B= 0)		I_{EBO}		500	uA
ON CHARACTERISTICS (1)					
DC Current Gain (I_C= 8.0 A, V_{CE}= 4.0 V) (I_C= 16 A, V_{CE}= 4.0 V)		hFE	 15 5	60	
Collector-Emitter Saturation Voltage (I_C = 8.0 A, I_B= 0.8 A) (I_C= 16 A, I_B= 3.2 A)		$V_{CE(sat)}$		 1.4 4.0	V
Base-Emitter On Voltage (I_C = 8.0 A, V_{CE}= 4.0 V)		$V_{BE(on)}$		 2.2	V
DYNAMIC CHARACTERISTICS					
Current-Gain-Bandwidth Product (2) (I_C= 1.0 A, V_{CE}= 10 V, f= 1.0MHz)		f_T	4.0		MHz
Output Capacitance (V_{CB}= 10V, I_E= 0, f= 1.0MHz)		C_{ob}		500	pF

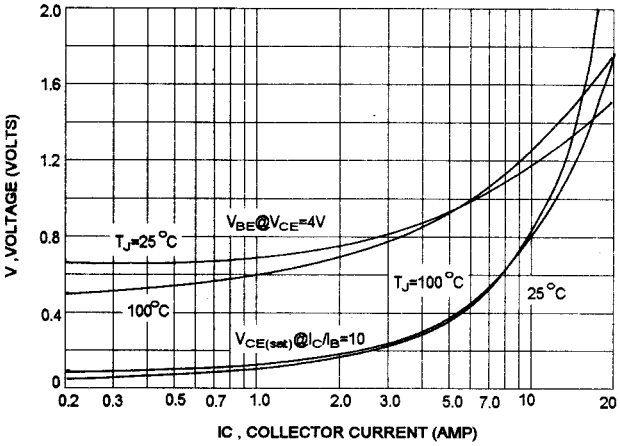
(1) Pulse Test: Pulse width = 300 us , Duty Cycle ≦ 2.0%

(2) $f_T = |h_{fe}| \cdot f_{test}$

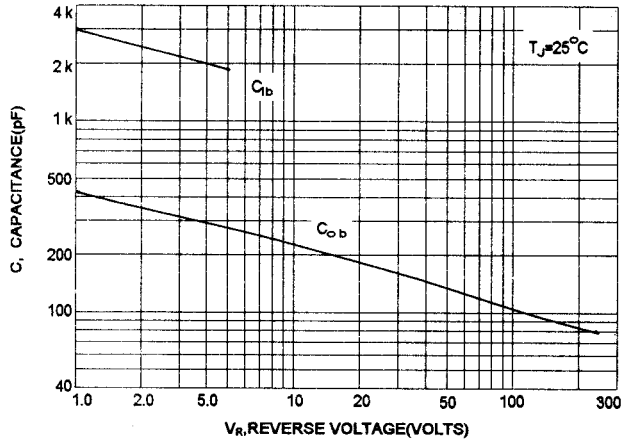
DC CURRENT GAIN



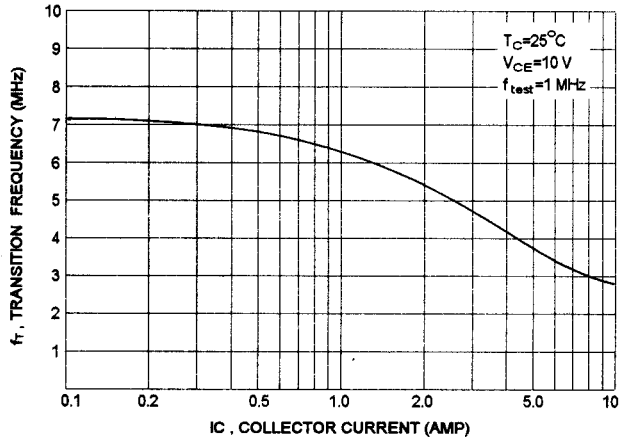
"ON" VOLTAGE



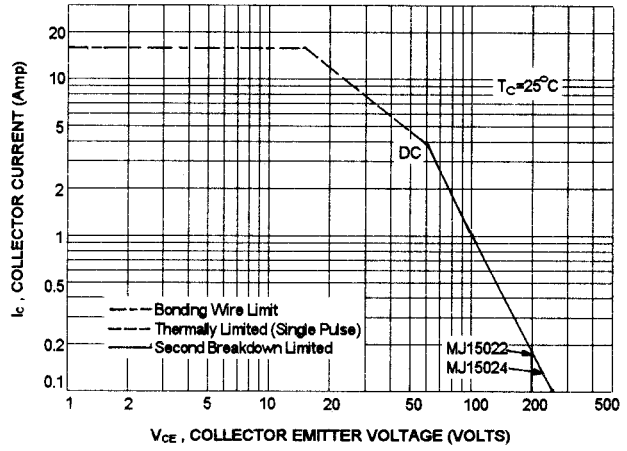
CAPACITANCES



CURRENT GAIN- BANDWIDTH PRODUCT



ACTIVE-REGION SAFE OPERATING AREA



COLLECTOR SATURATION REGION