NPN - MJ15022, MJ15024*

*MJ15024 is a Preferred Device

Silicon Power Transistors

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

Features

- High Safe Operating Area (100% Tested) 2 A @ 80 V
- High DC Current Gain $h_{FE} = 15$ (Min) @ $I_C = 8$ Adc
- Pb-Free Packages are Available*

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector–Emitter Voltage MJ15022 MJ15024	V _{CEO}	200 250	Vdc
Collector-Base Voltage MJ15022 MJ15024	V _{CBO}	350 400	Vdc
Emitter-Base Voltage	V _{EBO}	5	Vdc
Collector–Emitter Voltage	V_{CEX}	400	Vdc
Collector Current – Continuous – Peak (Note 1)	I _C	16 30	Adc
Base Current – Continuous	Ι _Β	5	Adc
Total Device 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

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

Maximum 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.

Pulse Test: Pulse Width = 5 ms, Duty Cycle ≤ 10%.



ON Semiconductor®

http://onsemi.com

16 AMPERES SILICON POWER TRANSISTORS 200 – 250 VOLTS, 250 WATTS



TO-204AA (TO-3) CASE 1-07 STYLE 1

MARKING DIAGRAM



MJ1502x = Device Code

x = 2 or 4

G = Pb-Free Package A = Assembly Location

Y = Year WW = Work Week MEX = Country of Origin

ORDERING INFORMATION

Device	Package	Shipping
MJ15022	TO-204	100 Units / Tray
MJ15022G	TO-204 (Pb-Free)	100 Units / Tray
MJ15024	TO-204	100 Units / Tray
MJ15024G	TO-204 (Pb-Free)	100 Units / Tray

Preferred devices are recommended choices for future use and best overall value.

^{*}For additional information on our Pb–Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

NPN - MJ15022, MJ15024*

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

V _{CEO(sus)}	200 250	_ _ _	-
. ,		_ _	-
I _{CEX}			
	- -	250 250	μAdc
I _{CEO}	- -	500 500	μAdc
I _{EBO}	-	500	μAdc
I _{S/b}	5 2	_ _	Adc
	•	•	
h _{FE}	15 5	60 -	_
V _{CE(sat)}	_ _	1.4 4.0	Vdc
V _{BE(on)}	_	2.2	Vdc
		-	-
f⊤	4	_	MHz
C _{ob}	-	500	pF
	I _{EBO} I _{S/b} h _{FE} V _{CE(sat)} V _{BE(on)}	-	- 500 500 500

^{2.} Pulse Test: Pulse Width = 300 μ s, Duty Cycle \leq 2%.

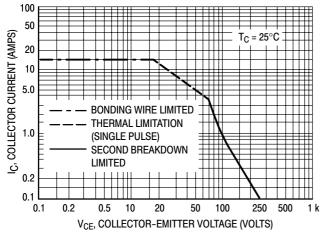


Figure 1. Active-Region Safe Operating Area

There are two limitations on the powerhandling 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 the curves indicate.

The data of Figure 1 is based on $T_{J(pk)} = 200$ °C; T_C is variable depending on conditions. At high case temperatures, thermal limitations will reduce the power that can be handled to values Ion than the limitations imposed by second breakdown.

TYPICAL CHARACTERISTICS

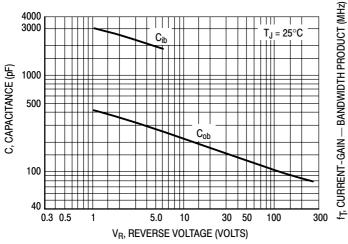
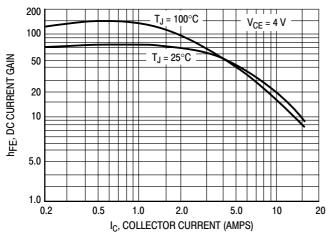


Figure 2. Capacitances

Figure 3. Current-Gain — Bandwidth Product



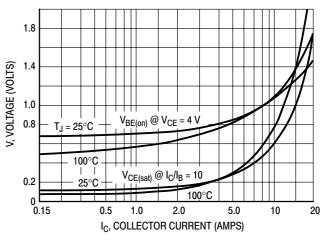


Figure 4. DC Current Gain

Figure 5. "On" Voltage

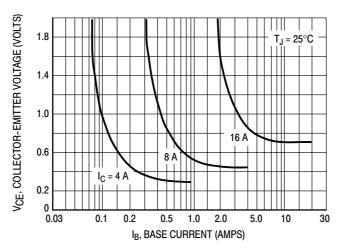
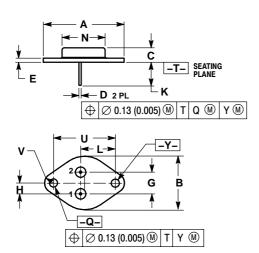


Figure 6. Collector Saturation Region

NPN - MJ15022, MJ15024*

PACKAGE DIMENSIONS

TO-204 (TO-3)CASE 1-07
ISSUE Z



NOTES:

- DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
- 2. CONTROLLING DIMENSION: INCH.
- ALL RULES AND NOTES ASSOCIATED WITH
 REFERENCED TO-204AA OUTLINE SHALL APPLY.

	INCHES		MILLIMETERS		
DIM	MIN	MAX	MIN	MAX	
Α	1.550 REF		39.37 REF		
В		1.050		26.67	
C	0.250	0.335	6.35	8.51	
D	0.038	0.043	0.97	1.09	
E	0.055	0.070	1.40	1.77	
G	0.430 BSC		10.92 BSC		
Н	0.215 BSC		5.46 BSC		
K	0.440	0.480	11.18	12.19	
L	0.665 BSC		16.89 BSC		
N		0.830		21.08	
Q	0.151	0.165	3.84	4.19	
U	1.187 BSC		30.15 BSC		
٧	0.131	0.188	3.33	4.77	

STYLE 1: PIN 1. BASE 2. EMITTER CASE: COLLECTOR

ON Semiconductor and are registered trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use a components in systems intended for surgical implant into the body, or other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC and its officers, employees, subsidiaries, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:

Literature Distribution Center for ON Semiconductor P.O. Box 61312, Phoenix, Arizona 85082–1312 USA Phone: 480–829–7710 or 800–344–3860 Toll Free USA/Canada Fax: 480–829–7709 or 800–344–3867 Toll Free USA/Canada Email: orderlit@onsemi.com

N. American Technical Support: 800–282–9855 Toll Free USA/Canada

Japan: ON Semiconductor, Japan Customer Focus Center 2–9–1 Kamimeguro, Meguro–ku, Tokyo, Japan 153–0051 Phone: 81–3–5773–3850

ON Semiconductor Website: http://onsemi.com

Order Literature: http://www.onsemi.com/litorder

For additional information, please contact your local Sales Representative.

ПОСТАВКА ЭЛЕКТРОННЫХ КОМПОНЕНТОВ

многоканальный

Общество с ограниченной ответственностью «МосЧип» ИНН 7719860671 / КПП 771901001 Адрес: 105318, г.Москва, ул.Щербаковская д.3, офис 1107

Данный компонент на территории Российской Федерации Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

http://moschip.ru/get-element

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г. Москва, ул. Щербаковская д. 3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru moschip.ru_6 moschip.ru 4 moschip.ru 9