



MJE13003D-XS

NPN SILICON TRANSISTOR

NPN SILICON POWER TRANSISTOR

DESCRIPTION

These devices are designed for high-voltage, high-speed power switching inductive circuits where fall time is critical. They are particularly suited for 115V and 220V applications in switch mode.

FEATURES

* 700V blocking capability

APPLICATIONS

- * Switching regulator's, inverters
- * Motor controls
- * Solenoid/relay drivers
- * Deflection circuits

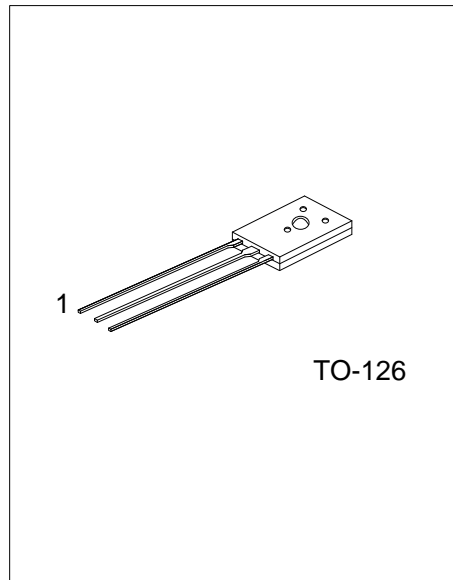
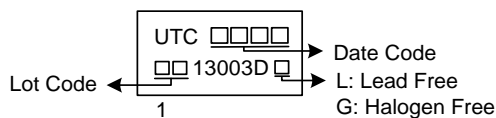
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen-Free		1	2	3	
MJE13003DL-XS-T60-K	MJE13003DG-XS-T60-K	TO-126	B	C	E	Bulk

Note: Pin Assignment: B: Base C: Collector E: Emitter

<p>MJE13003DG-XS-T60-K</p>	<p>(1) R: Tape Reel</p> <p>(2) T60: TO-126</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
----------------------------	---

MARKING



MJE13003D-XS

NPN SILICON TRANSISTOR

■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C, unless otherwise specified.)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Emitter Voltage		V _{CEO(SUS)}	400	V
Collector-Base Voltage		V _{CBO}	700	V
Collector-Emitter Voltage (V _{BE} =0)		V _{CES}	700	V
Emitter Base Voltage		V _{EBO}	9	V
Collector Current	Continuous	I _C	1.2	A
	Peak (1)	I _{CM}	2.4	
Power Dissipation	T _A =25°C	P _D	1.4	W
	T _C =25°C		20	W
Junction Temperature		T _J	+150	°C
Storage Temperature		T _{STG}	-55 ~ +150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

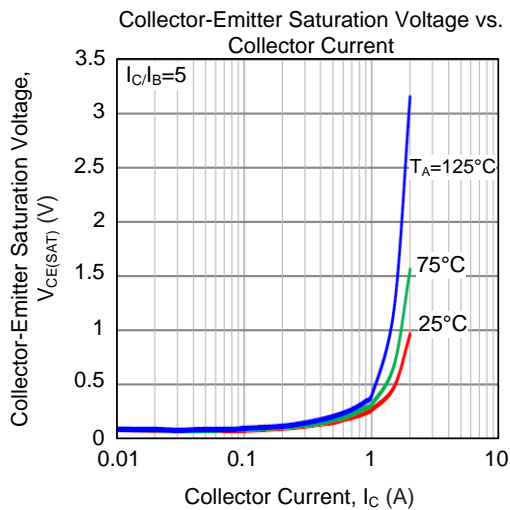
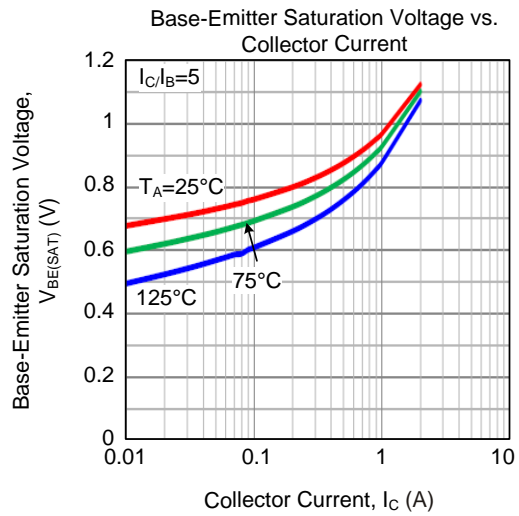
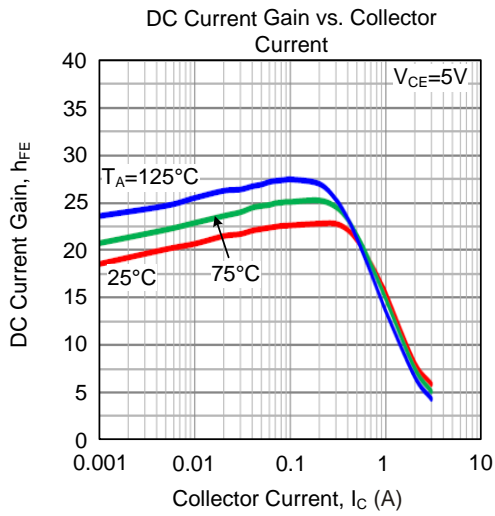
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS (T_C=25°C, unless otherwise specified.)

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS (Note)							
Collector-Emitter Sustaining Voltage		V _{CEO(SUS)}	I _C =10mA, I _B =0	400			V
Collector Cutoff Current	T _C =25°C	I _{CEO}	V _{CEO} =Rated Value, V _{BE(OFF)} =1.5 V			1	mA
	T _C =100°C					5	
Emitter Cutoff Current		I _{EBO}	V _{EB} =9V, I _C =0			1	mA
ON CHARACTERISTICS (Note)							
DC Current Gain		h _{FE1}	I _C =0.2A, V _{CE} =5V	15		30	V
		h _{FE2}	I _C =1A, V _{CE} =5V	5		30	V
Collector-Emitter Saturation Voltage		V _{CE(SAT)}	I _C =1A, I _B =0.2A			0.6	V
Base-Emitter Saturation Voltage		V _{BE(SAT)}	I _C =1A, I _B =0.25A			1.2	V
DYNAMIC CHARACTERISTICS							
Output Capacitance		C _{OB}	V _{CB} =10V, I _E =0, f=0.1MHz		16		pF
SWITCHING CHARACTERISTICS							
Resistive Load (Table 1)							
Delay Time		t _d	V _{CC} =125V, I _C =1A, I _{B1} =I _{B2} =0.2A, t _p =25μs, Duty Cycle≤1%		0.05	0.1	μs
Rise Time		t _R			0.5	1	μs
Storage Time		t _S			2	4	μs
Fall Time		t _F			0.4	0.7	μs
Inductive Load, Clamped (Table 1)							
Storage Time		t _{STG}	I _C =1A, V _{CLAMP} =300V, I _{B1} =0.2A, V _{BE(OFF)} =5V _{DC} , T _C =100°C		1.7	4	μs
Crossover Time		t _C			0.29	0.75	μs
Fall Time		t _F			0.15		μs

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

TYPICAL CHARACTERISTICS



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.