

**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

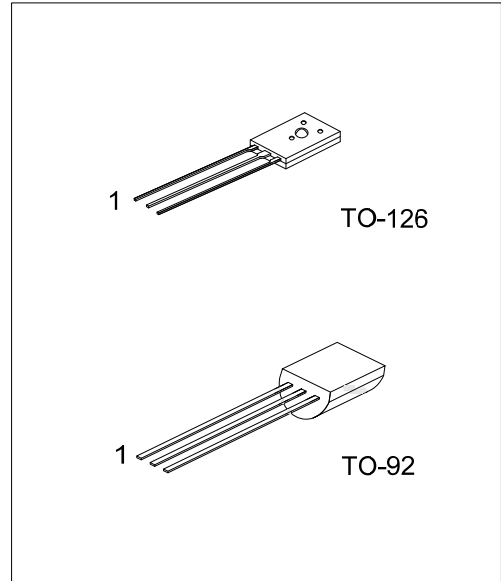
Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen-Free		1	2	3	
MJE13003DL-XS-T60-K	MJE13003DG-XS-T60-K	TO-126	B	C	E	Bulk
MJE13003DL-XS-92-A-B	MJE13003DG-XS-T92-A-B	TO-92	E	C	B	Tape Box
MJE13003DL-XS-T92-A-K	MJE13003DG-XS-T92-A-K	TO-92	E	C	B	Bulk
MJE13003DL-XS-92-F-B	MJE13003DG-XS-T92-F-B	TO-92	B	C	E	Tape Box
MJE13003DL-XS-T92-F-K	MJE13003DG-XS-T92-F-K	TO-92	B	C	E	Bulk

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

MJE13003DG-XS-T92-A-B (1) Packing Type (2) Pin Assignment (3) Package Type (4) Green Package	(1) K: Bulk, B: Tape Box (2) refer to Pin Assignment (3) T60: TO-126, T92: TO-92 (4) G: Halogen Free and Lead Free, L: Lead Free
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MARKING

TO-126	TO-92
UTC □□□□ □□ 13003D □ Lot Code Date Code L: Lead Free G: Halogen Free	UTC MJE 13003D □ Lot Code Pin Code L: Lead Free G: Halogen Free Date Code



■ 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	A
Power Dissipation	T _A =25°C	TO-126	P _D	1.4	W
		TO-92		1.1	W
	T _C =25°C	TO-126		20	W
		TO-92		1.5	W
Junction Temperature			T _J	+150	°C
Storage Temperature			T _{STG}	-55 ~ +150	°C

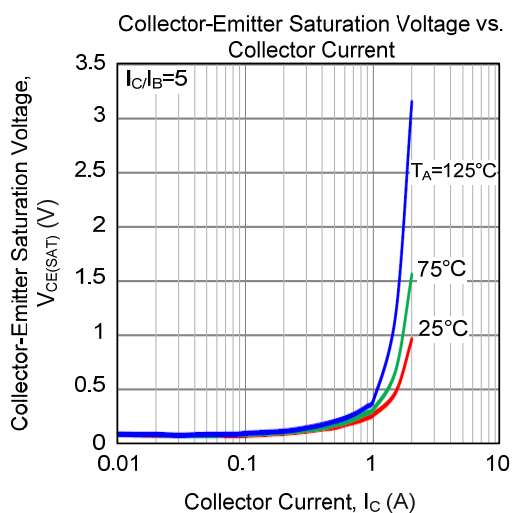
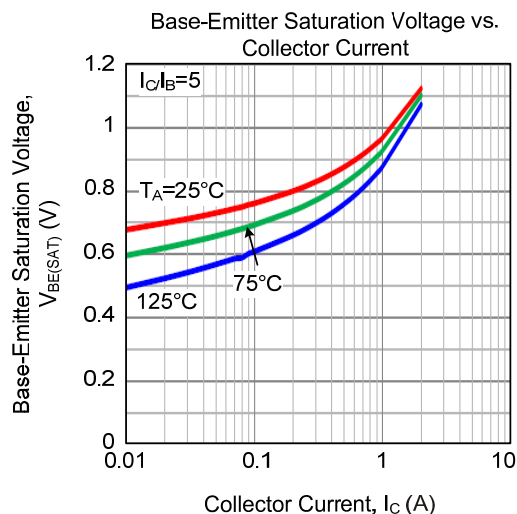
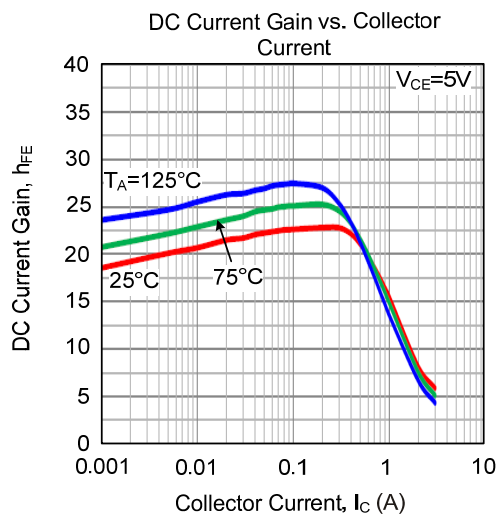
Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ 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
Diode Forward Voltage		V _F	I _F =0.5A			1.4	V

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

■ TYPICAL CHARACTERISTICS



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