



Silicon NPN Power Transistors

MJ16018

DESCRIPTION

- With TO-3 package
- High voltage ,high speed

APPLICATIONS

- Switching Regulators
- Inverters
- Solenoids
- Relay Drivers
- Motor Controls
- Deflection Circuits

PINNING

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector



Fig.1 simplified outline (TO-3) and symbol

Absolute maximum ratings($T_c=25^{\circ}\text{C}$)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	1300	V
V_{CEO}	Collector-emitter voltage	Open base	750	V
V_{EB0}	Emitter-base voltage	Open collector	6	V
I_C	Collector current (DC)		10	A
I_{CM}	Collector current-Peak		15	A
I_B	Base current		8	A
I_{BM}	Base current-Peak		12	A
P_D	Total power dissipation	$T_c=25^{\circ}\text{C}$ $T_c=100^{\circ}\text{C}$	175 100	W
T_j	Junction temperature		150	$^{\circ}\text{C}$
T_{stg}	Storage temperature		-55~150	$^{\circ}\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th\ j-c}$	Thermal resistance junction to case	1.0	$^{\circ}\text{C/W}$

**Silicon NPN Power Transistors****MJ16018****CHARACTERISTICS****T_j=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CEQ(SUS)}	Collector-emitter sustaining voltage	I _C =50mA; I _B =0	750			V
V _{CEsat-1}	Collector-emitter saturation voltage	I _C =5A; I _B =2A T _C =110°C			1.0 1.5	V
V _{CEsat-2}	Collector-emitter saturation voltage	I _C =10A; I _B =5A			5.0	V
V _{BEsat}	Base-emitter saturation voltage	I _C =5A; I _B =2A T _C =110°C			1.5 1.5	V
I _{CEV}	Collector cut-off current	V _{CEV} =1300V, V _{BE(off)} =1.5Vdc T _C =100°C			0.25 1.50	mA
I _{CLR}	Collector cut-off current	V _{CE} =1300V; R _{BE} =50 Ω T _C =100°C			2.5	mA
I _{EBO}	Emitter cut-off current	V _{EB} =6V; I _C =0			0.1	mA
h _{FE}	DC current gain	I _C =5A; V _{CE} =5V	4			
C _{OB}	Collector outoput capacitance	f=1kHz; V _{CB} =10V			450	pF

Switching times resistive load

t _d	Delay time	I _C =5A; I _{B1} = I _{B2} =2.0A V _{CC} =250V, R _{B2} =3 Ω PW=25 μs Duty Cycle ≤ 2%		0.085	0.2	μs
t _r	Rise time			0.90	2.0	μs
t _s	Storage time			4.5	9.0	μs
t _f	Fall time			0.2	0.4	μs

