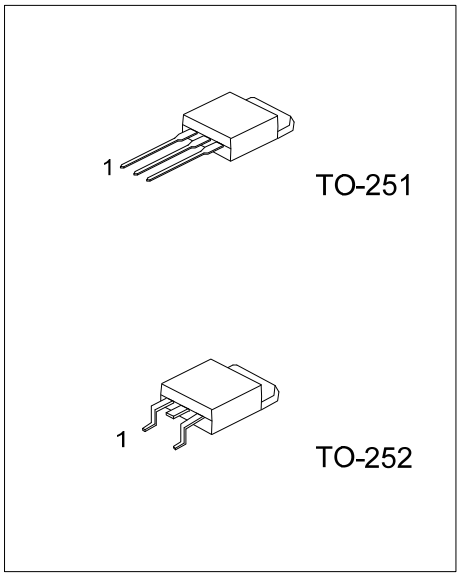
2SD1802

NPN SILICON TRANSISTOR

HIGH CURRENT SWITCHING APPLICATION



■ DESCRIPTION

The UTC **2SD1802** applies to voltage regulators, relay drivers, lamp drivers and electrical equipment.

■ FEATURES

* Adoption of FBET, MBIT processes
* Large current capacity and wide ASO
* Low collector-to-emitter saturation voltage
* Fast switching speed

■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
2SD1802L-x-TM3-T	2SD1802G-x-TM3-T	TO-251	B	C	E	Tube
2SD1802L-x-TN3-T	2SD1802G-x-TN3-T	TO-252	B	C	E	Tube
2SD1802L-x-TN3-R	2SD1802G-x-TN3-R	TO-252	B	C	E	Tape Reel

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

2SD1802L-x-TM3-T
- (1)Packing Type
- (2)Packing Type
- (3)Rank
- (4)Lead Free

(1) T: Tube, R: Tape Reel
(2) TM3: TO-251, TN3: TO-252
(3) x: refer to Classification of h_{FE}
(4) G: Halogen Free, L: Lead Free

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■ ABSOLUTE MAXIMUM RATING (T_A= 25℃, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Power Dissipation	P_c	1	W
T_C=25℃		15	
Collector Current (DC)	I_C	3	A
Collector Current (PULSE)	I_{CP}	6	A
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55 ~ +150	℃

Note 1. 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.

2. The device is guaranteed to meet performance specification within 0℃~70℃ operating temperature range and assured by design from –20℃~85℃.

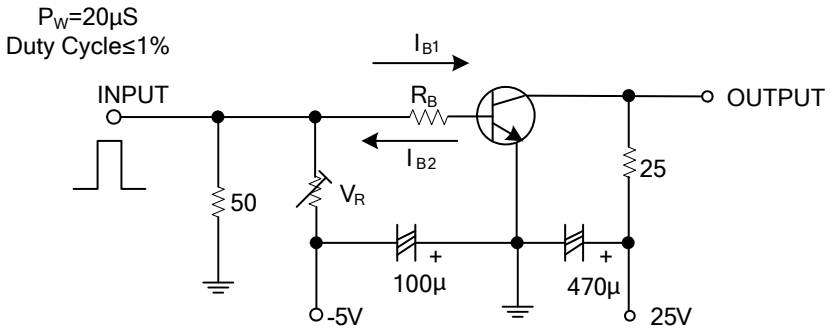
■ ELECTRICAL CHARACTERISTICS (T_A=25℃, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Cutoff Current	I_{CBO}	V_{CB}=40V, I_E=0			1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=4V, I_C=0			1	μA
DC Current Gain (note)	h_{FE1}	V_{CE}=2V, I_C=100mA	100		560	
	h_{FE2}	V_{CE}=2V, I_C=3A	35			
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=50mA		150		MHz
Output Capacitance	C_{OB}	V_{CB}=10V, f=1MHz		25		pF
C-E Saturation Voltage	$V_{CE(SAT)}$	I_C= 2A, I_B=100mA		0.19	0.5	V
B-E Saturation Voltage	$V_{BE(SAT)}$	I_C= 2A, I_B=100mA		0.94	1.2	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	I_C= 10μA, I_E=0	60			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	I_C= 1mA, R_{BE}=∞	50			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	I_E= 10μA, I_C=0	6			V
Turn-on Time	t_{ON}	See test circuit		70		ns
Storage Time	t_{STG}	See test circuit		650		ns
Fall Time	t_F	See test circuit		35		ns

■ CLASSIFICATION OF h_{FE1}

RANK	R	S	T	U
RANGE	100-200	140-280	200-400	280-560

■ TEST CIRCUIT (Unit : resistance : Ω, capacitance : F)



$Ic=10I_{B1}= -10I_{B2}=1A$

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