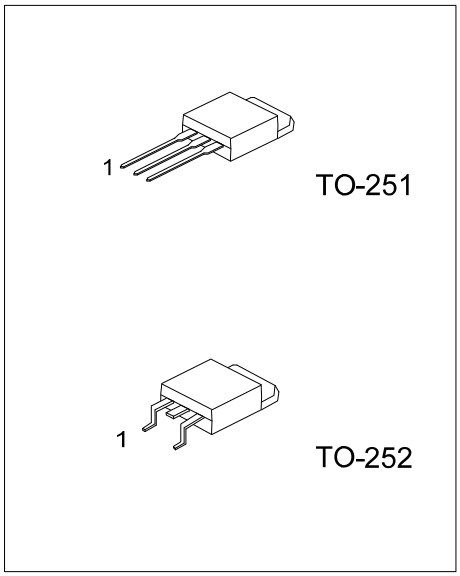
2SD1802

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

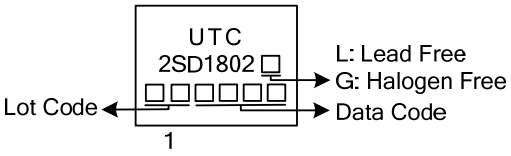
Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
2SD1802L-x-TM3-T	2SD1802G-x-TM3-T	TO-251	B	C	E	Tube
2SD1802L-x-TN3-T	2SD1802G-x-TN3-T	TO-252	B	C	E	Tube
2SD1802L-x-TN3-R	2SD1802G-x-TN3-R	TO-252	B	C	E	Tape Reel

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

2SD1802L-x-TM3-T
(1)Packing Type
(2)Packing Type
(3)Rank
(4)Green Package

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

■ MARKING



■ ABSOLUTE MAXIMUM RATING (T_A= 25°C, 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	°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.

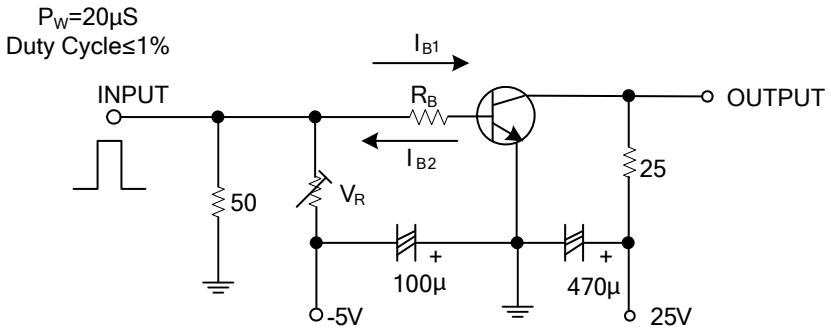
■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

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)



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