



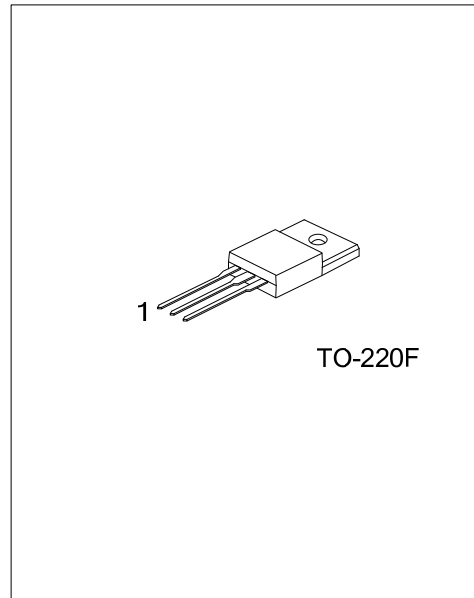
2SB1216

NPN PLANAR TRANSISTOR

HIGH CURRENT SWITCHING APPLICATIONS

■ FEATURES

- * Low collector-to-emitter saturation voltage
- * Good linearity of h_{FE}
- * Small and slim package facilitating compactness of sets.
- * High f_T
- * Fast switching speed
- * Complement the 2SD1816



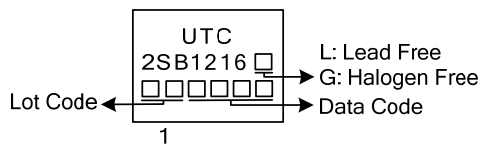
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
2SB1216L-x-TF3-T	2SB1216G-x-TF3-T	TO-220F	B	C	E	Tube

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

<p>2SD1816L-x-TF3-T</p>	<p>(1) T: Tube, R: Tape Reel (2) TF3: TO-220F (3) x: refer to Classification of h_{FE1} (4) L: Lead Free, G: Halogen Free and Lead Free</p>
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■ MARKING



■ ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		V_{CBO}	-120	V
Collector-Emitter Voltage		V_{CEO}	-100	V
Emitter-Base Voltage		V_{EBO}	-6	V
Collector Current	DC	I_C	-4	A
	PULSE(Note 1)		-8	A
Collector Power Dissipation		P_D	2	W
Junction Temperature		T_J	+150	$^{\circ}\text{C}$
Storage Temperature		T_{STG}	-40 ~ +150	$^{\circ}\text{C}$

Note: 1. Duty=1/2, Pw=20ms

2. 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.

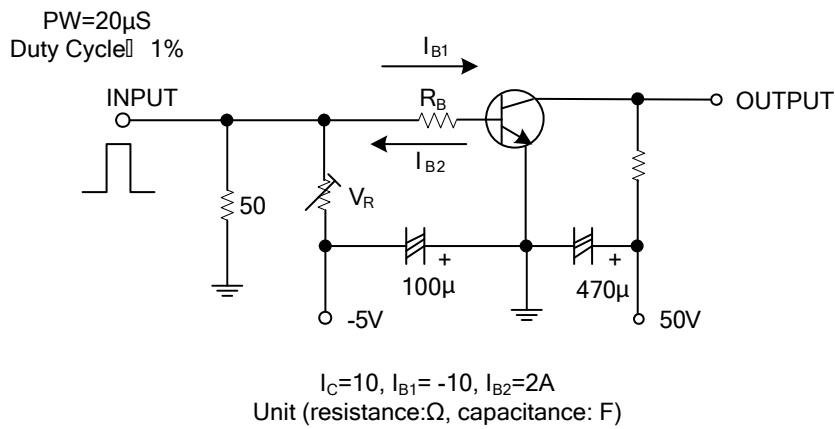
■ ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Base Breakdown Voltage	BV_{CBO}	$I_C = 10\mu\text{A}, I_E = 0$	-120			V
Collector Emitter Breakdown Voltage	BV_{CEO}	$I_C = 1\text{mA}, R_B = \infty$	-100			V
Emitter Base Breakdown Voltage	BV_{EBO}	$I_E = 10\mu\text{A}, I_C = 0$	-6			V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C = 2\text{A}, I_B = 0.2\text{A}$		-0.9	-1.2	V
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = 2\text{A}, I_B = 0.2\text{A}$		-200	-500	mV
Collector Cut-Off Current	I_{CBO}	$V_{CB} = 100\text{V}, I_E = 0$			-1	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB} = 4\text{V}, I_C = 0$			-1	μA
DC Current Transfer Ratio	h_{FE1}	$V_{CE} = 5\text{V}, I_C = 0.5\text{A}$	70		400	
	h_{FE2}	$V_{CE} = 5\text{V}, I_C = 3\text{A}$	40			
Transition Frequency	f_T	$V_{CE} = 10\text{V}, I_C = 0.5\text{A}$		130		MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0\text{A}, f = 1\text{MHz}$		65		pF
Turn-on Time	t_{ON}	See test circuit		100		ns
Storage Time	t_{STG}	See test circuit		800		ns
Fall Time	t_F	See test circuit		50		ns

■ CLASSIFICATION of h_{FE1}

RANK	Q	R	S	T
RANGE	70 - 140	100 - 200	140 - 280	200 - 400

■ TEST CIRCUIT



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