KTX511T

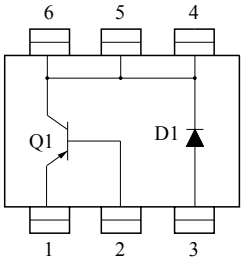
EPITAXIAL PLANAR PNP TRANSISTOR
SCHOTTKY BARRIER TYPE DIODE

DC/DC CONVERTER APPLICATIONS.

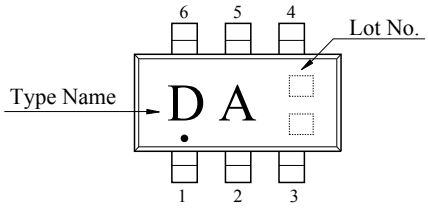
FEATURES

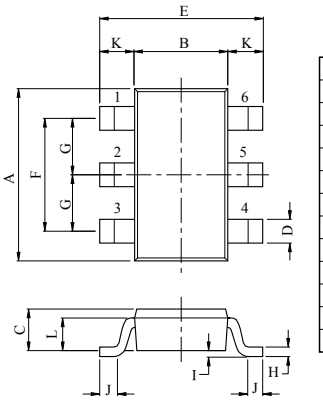
- Composite type with a PNP transistor and a Schottky barrier diode contained in one package facilitating high-density mounting.
- The KTX511T consists of two chips which are equivalent to the KTA1532T and the KDR701S, respectively.
- Ultrasmall-sized package permiting applied sets to be made small and slim (mounting height 0.7㎜).

EQUIVALENT CIRCUIT (TOP VIEW)



Marking





DIM	MILLIMETERS
A	2.9±0.2
B	1.6+0.2/-0.1
C	0.70±0.05
D	0.4±0.1
E	2.8+0.2/-0.3
F	1.9±0.2
G	0.95
H	0.16±0.05
I	0.00-0.10
J	0.25+0.25/-0.15
K	0.60
L	0.55

1. Q_1 EMITTER
2. Q_1 BASE
3. D_1 ANODE
4. Q_1, D_1 COMMON (COLLECTOR, CATHODE)
5. Q_1, D_1 COMMON (COLLECTOR, CATHODE)
6. Q_1, D_1 COMMON (COLLECTOR, CATHODE)

TS6

MAXIMUM RATING (Ta=25℃)

Transistor Q_1

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	-20	V
Collector-Emitter Voltage		V_{CEO}	-20	V
Emitter-Base Voltage		V_{EBO}	-5	V
Collector Current	DC	I_C	-1.5	A
	Pulse	I_{CP}	-3	A
Base Current		I_B	-300	mA
Collector Power Dissipation		P_C *	0.9	W
Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-55～150	℃

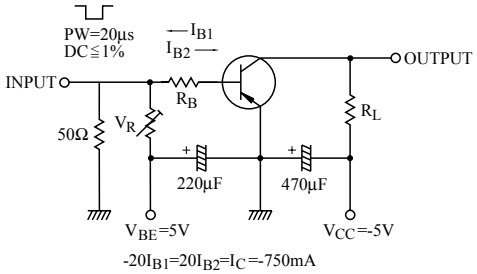
* Package mounted on a ceramic board (600㎟×0.8㎜)

Diode (SBD) D_1

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Reverse Voltage	V_{RRM}	30	V
Reverse Voltage	V_R	30	V
Average Forward Current	I_O	0.7	A
Non-Repetitive Peak Surge Current	I_{FSM}	5	A
Junction Temperature	T_j	125	℃
Storage Temperature Range	T_{stg}	-55～150	℃

ELECTRICAL CHARACTERISTICS (Ta=25℃)

Transistor Q_1

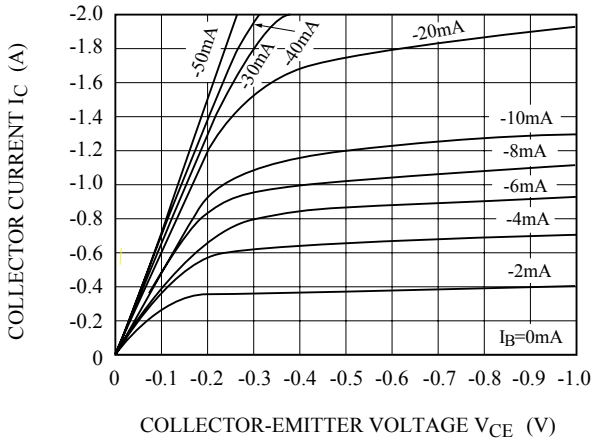
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	V_{CB}=-12V, I_E=0	-	-	-0.1	μA
Emitter Cut-off Current		I_{EBO}	V_{EB}=-4V, I_C=0	-	-	-0.1	μA
Collector-Base Breakdown Voltage		$V_{(BR)CBO}$	I_C=-10μA, I_E=0	20	-	-	V
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	I_C=-1mA, I_B=0	20	-	-	V
Emitter-Base Breakdown Voltage		$V_{(BR)EBO}$	I_E=-10μA, I_C=0	-5	-	-	V
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	I_C=-750mA, I_B=-15mA	-	-120	-180	mV
			I_C=-1.5A, I_B=-30mA	-	-210	-320	mV
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	I_C=-750mA, I_B=-15mA	-	-0.85	-1.2	V
DC Current Gain		h_{FE}	V_{CE}=-2V, I_C=-100mA	200	-	560	
Transition Frequency		f_T	V_{CE}=-2V, I_C=-300mA	-	210	-	MHz
Collector Output Capacitance		C_{ob}	V_{CB}=-10V, f=1MHz	-	30	-	pF
Swiitching Time	Turn-On Time	t_{on}		-	50	-	nS
	Storage Time	t_{stg}		-	90	-	
	Fall Time	t_f		-	15	-	

Diode (SBD) D_1

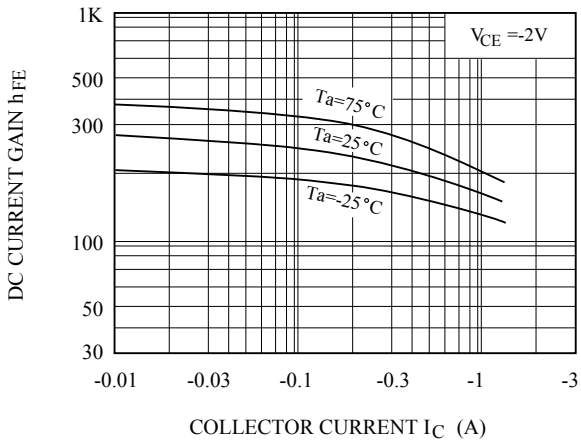
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Reverse Voltage	V_R	I_R=1mA	30	-	-	V
Forward Voltage	V_F	I_F=0.7A	-	-	0.55	V
Reverse Current	I_R	V_R=30V			80	μA
Total Capacitance	C_T	V_R=0V, f=1MHz	-	190	-	pF
Reverse Recover Time	t_{rr}	I_F=I_R=100mA	-	7.5	-	ns

Q_1 (PNP TRANSISTOR)

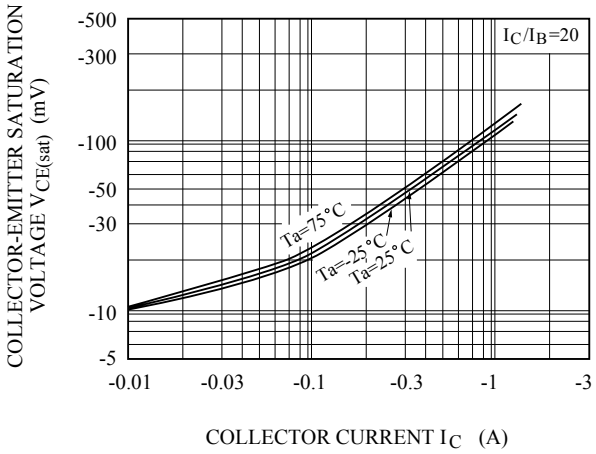
I_C - V_{CE}



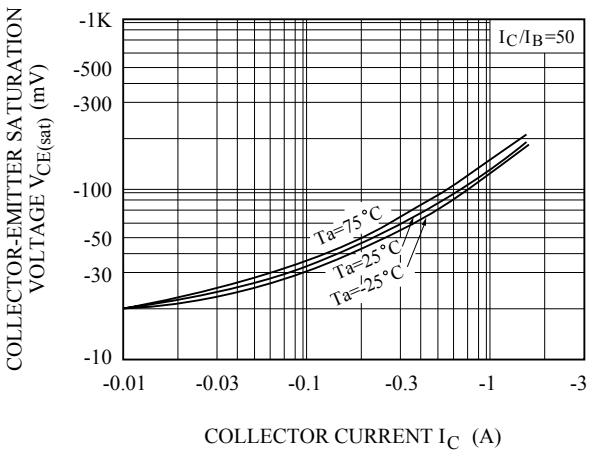
h_{FE} - I_C



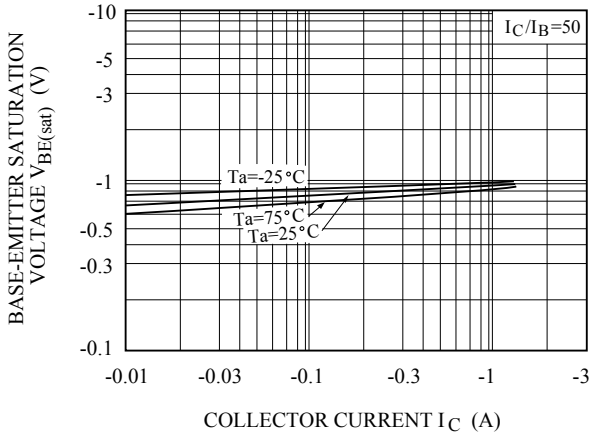
$V_{CE(sat)}$ - I_C



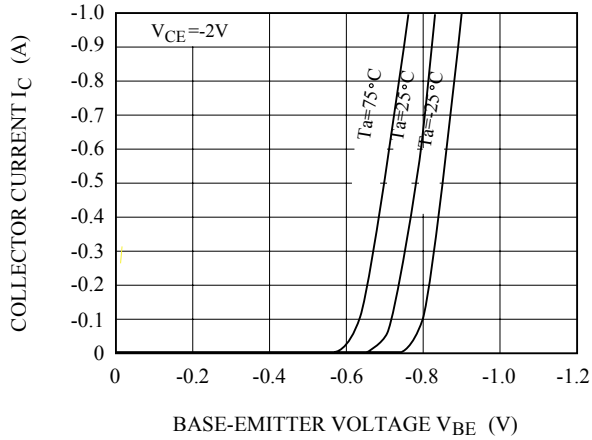
$V_{CE(sat)}$ - I_C



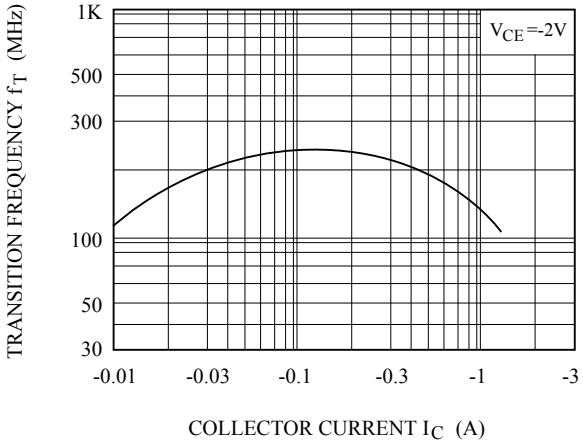
$V_{BE(sat)}$ - I_C



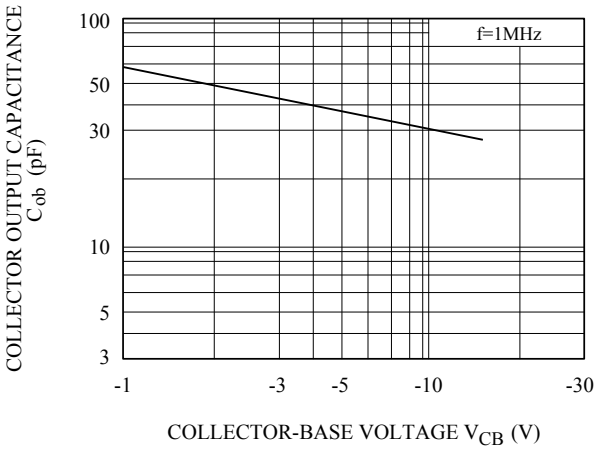
I_C - V_{BE}



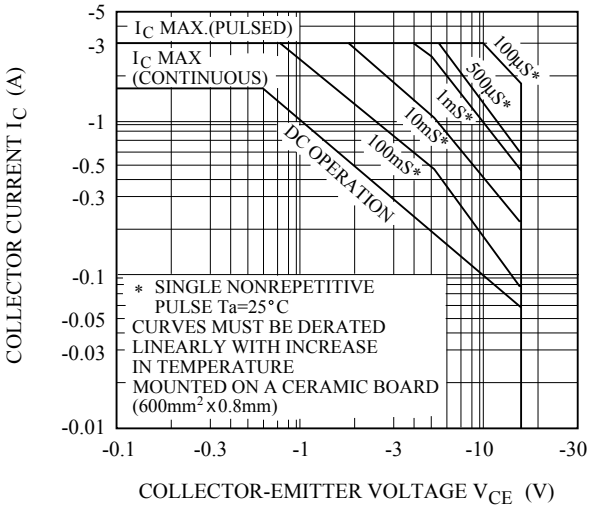
f_T - I_C



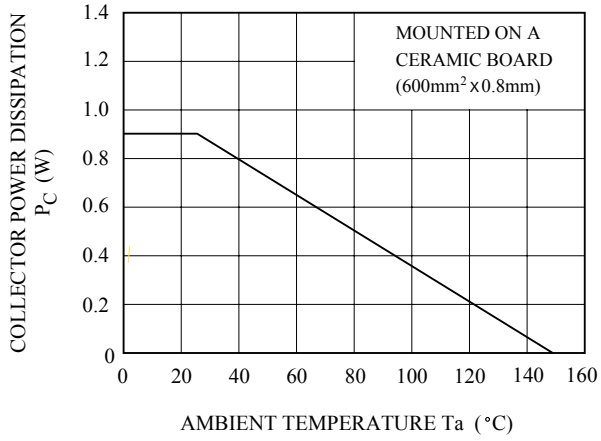
C_{ob} - V_{CB}



SAFE OPERATING AREA

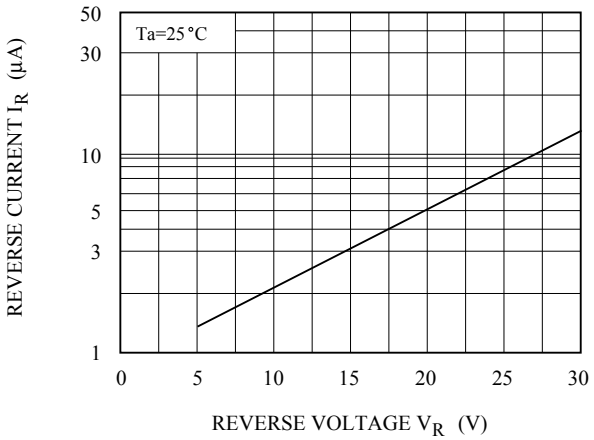


Pc - Ta

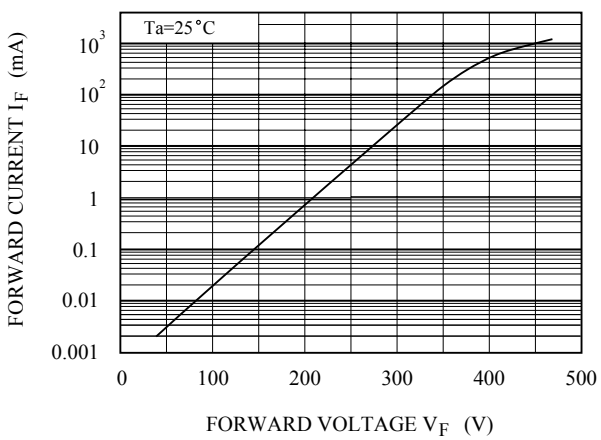


D_1 (SBD)

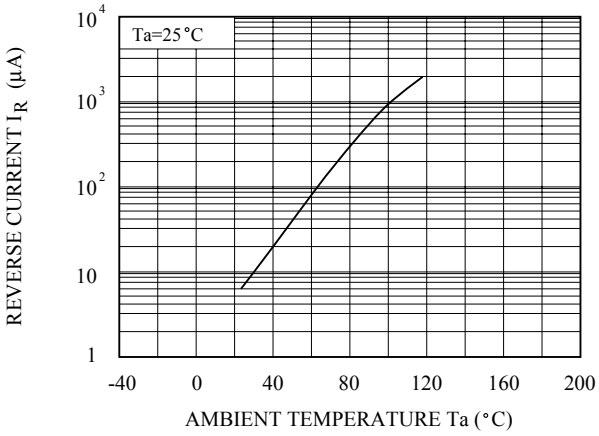
I_R - V_R



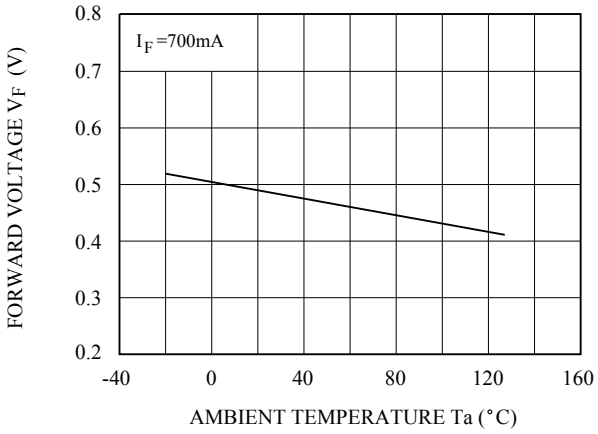
I_F - V_F



I_R - Ta



V_F - Ta



C_T - V_R