NEC
ELECTRON DEVICE

SILICON POWER TRANSISTORS
2SB546A,547A/2SD401A,402A

VERTICAL DEFLECTION OUTPUT FOR COLOR TV
PNP/NPN SILICON TRIPLE DIFFUSED TRANSISTORS

DESCRIPTION

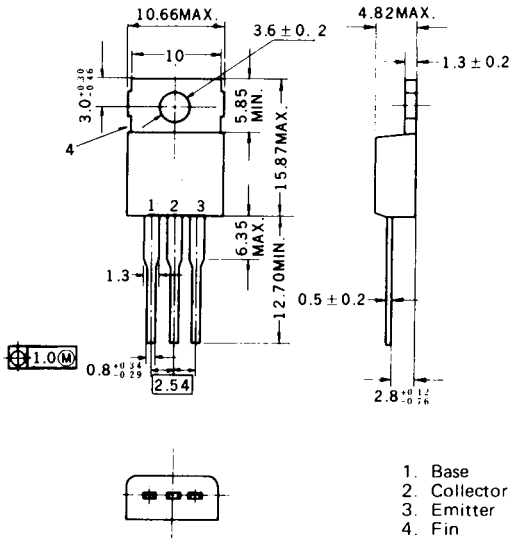
The 2SB546A (PNP), 2SD401A (NPN), 2SB547A (PNP), and 2SD402A (NPN) are high voltage triple diffused silicon transistors. These devices are designed for use in line-operated color TV vertical deflection of complementary symmetry circuit.
2SB546A and 2SD401A are complementary transistors, consisting of straight leads.
2SB547A and 2SD402A consist of emitter and base leads for insertion into TO-66 sockets.

QUICK REFERENCE DATA					
			2SB546A, 2SB547A	2SD401A, 2SD402A	
Collector-emitter voltage (open base)	V_{CEO}	MAX.	150	150	V
Collector current (peak value)	I_{CM}	MAX.	3	3	A
Total power dissipation up to T_{case} = 25°C	P_{tot}	MAX.	30	30	W
D.C. Current gain					
I_C = -0.4/0.4A, V_{CE} = -10/10 V	h_{FE}	MIN.	40	40	

MECHANICAL DATA

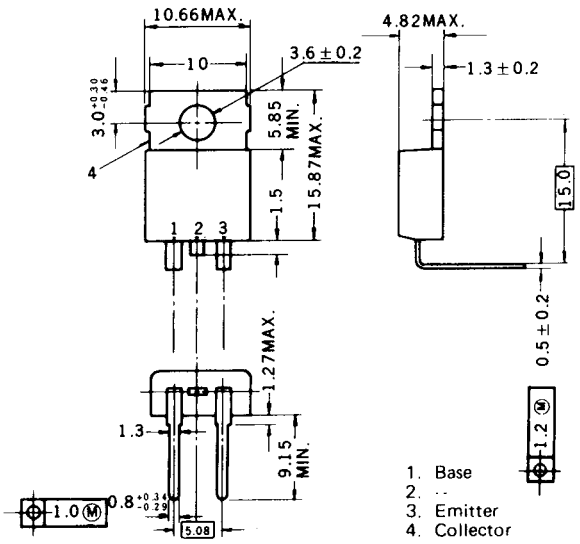
(Dimensions in mm)

2SB546A, 2SD401A



1. Base
2. Collector
3. Emitter
4. Fin

2SB547A, 2SD402A



1. Base
2. --
3. Emitter
4. Collector

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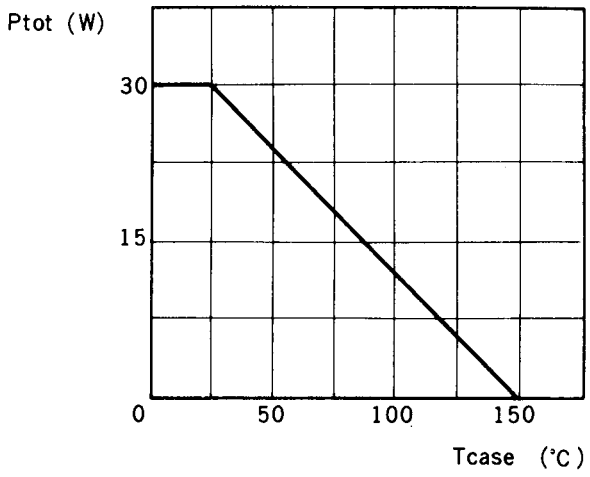
ABSOLUTE MAXIMUM RATINGS (Tamb = 25°C)

Voltages (Tamb = 25°C)			2SB546A, 2SB547A	2SD401A, 2SD402A	
Collector-base voltage (open emitter)	V_{CBO}	MAX.	-200	200	V
Collector-emitter voltage (open base)	V_{CEO}	MAX.	-150	150	V
Emitter-base voltage (open collector)	V_{EBO}	MAX.	-5.0	5.0	V
Currents (Tamb = 25°C)					
Collector current (D.C.)	I_C	MAX.	-2.0	2.0	A
Collector current (peak value)	I_{CM}	MAX.	-3.0	3.0	A
Base current (peak value)	I_{BM}	MAX.	-1.5	1.5	A
Power dissipation					
Total power dissipation at T_{case} = 25°C	P_{tot}	MAX.	30		W
TEMPERATURES					
Storage temperature	T_{stg}		-55 to +150		°C
Junction temperature	T_j		150		°C
THERMAL RESISTANCE					
from junction to case	$R_{th\ j\text{-}case}$		4.16		°C/W
from junction to ambient in free air	$R_{th\ j\text{-}a}$		78		°C/W

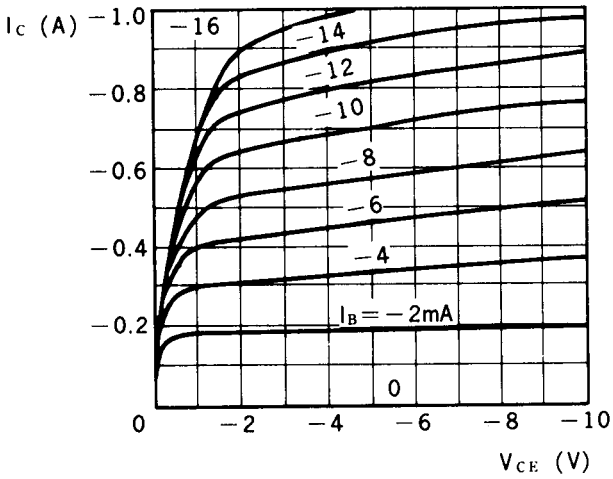
ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C)

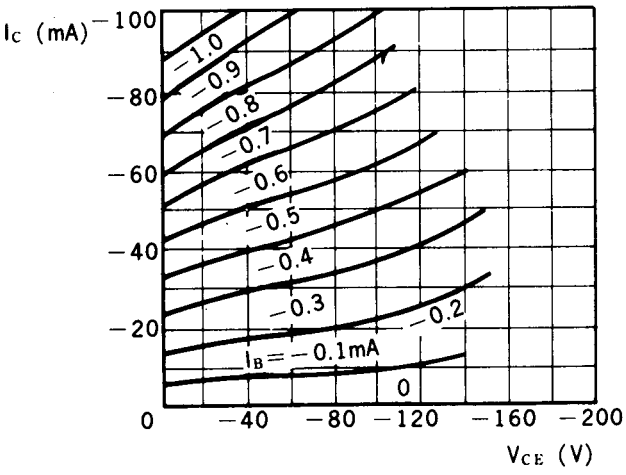
			2SB546A, 2SB547A,/2SD401A, 2SD402A	
Collector cut-off current				
I_E = 0, V_{CB} = -150/150V,	I_{CBO}	<	-50/50	μA
Emitter cut-off current				
V_{EB} = -4.0/4.0 V, I_C = 0	I_{EBO}	<	-50/50	μA
D.C. current gain				
V_{CE} = -10/10V, I_C = -0.4/0.4A	h_{FE}	>	40/40	
Collector-emitter saturation voltage				
I_C = -0.5/0.5A, I_B = -0.05/0.05A	$V_{CE(sat)}$	<	-2.0/2.0	V
Transition frequency				
V_{CE} = -10/10V, I_C = -0.4/0.4A	f_T	TYP.	7/7	MHz
Collector capacitance				
V_{CB} = -10/10V, f = 1.0 MHz, I_E = 0	C_C	TYP.	75/45	pF



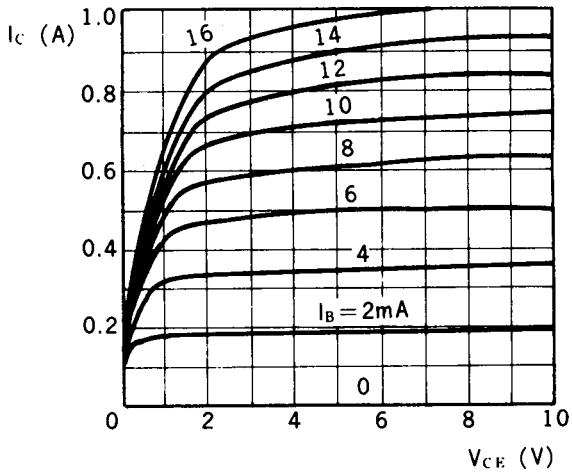
TYPICAL CHARACTERISTICS (Tamb = 25°C)

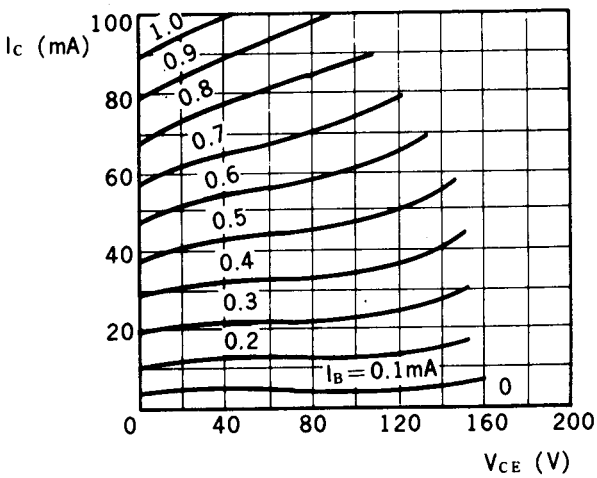
2SB546A, 2SB547A



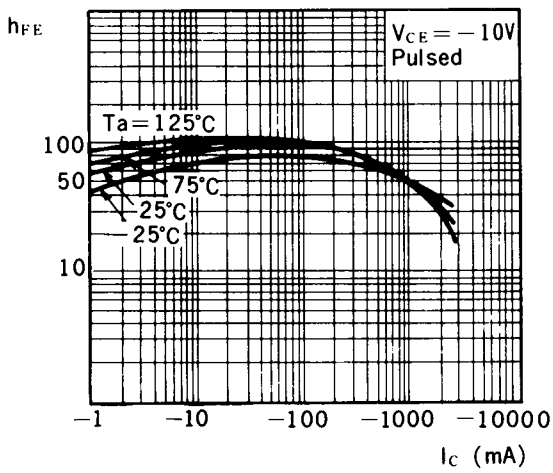


2SD401A, 2SD402A

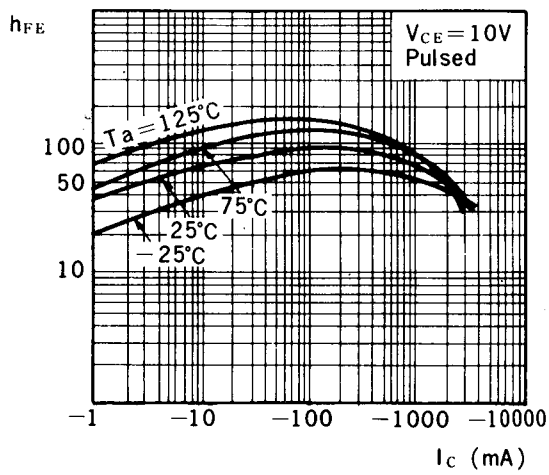


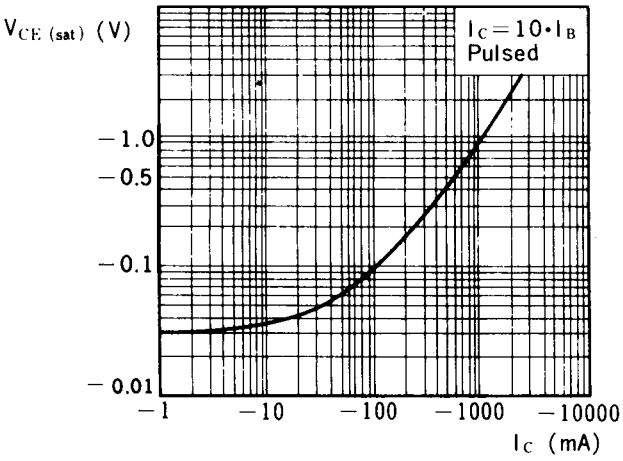


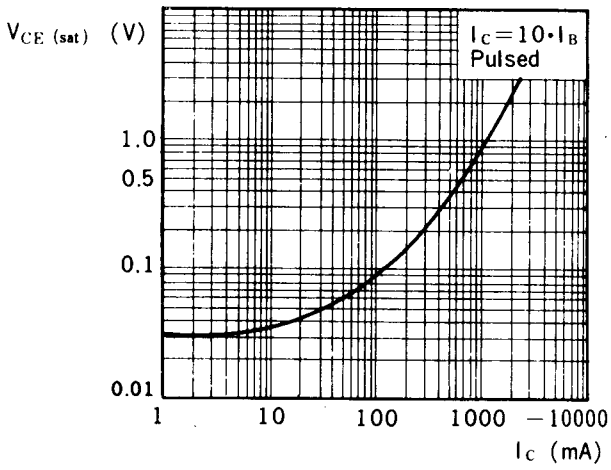
2SB546A, 547A

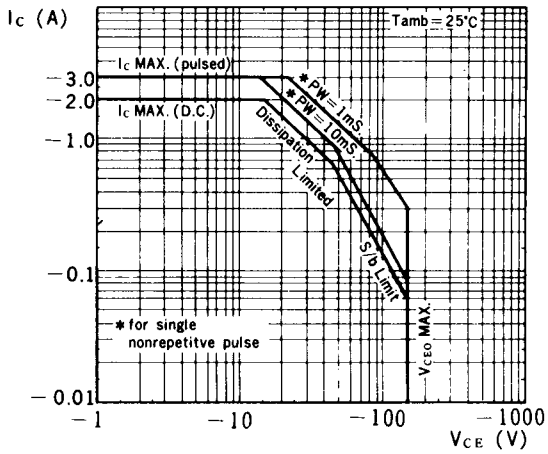


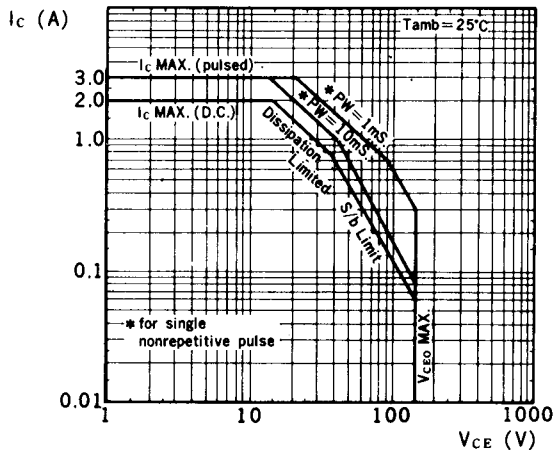
2SD401A, 2SD402A











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