



# SANYO SEMICONDUCTOR

TIP31, TIP31A, TIP31B, TIP31C  
TIP32, TIP32A, TIP32B, TIP32C

## COMPLEMENTARY SILICON PLASTIC POWER TRANSISTORS

### ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

	TIP31	31A	31B	31C	
	TIP32	32A	32B	32C	
COLLECTOR-BASE VOLTAGE	40	60	80	100	V
COLLECTOR-EMITTER VOLTAGE	40	60	80	100	V
EMITTER-BASE VOLTAGE			5.0		V
COLLECTOR CURRENT (DC)			3.0		A
(PEAK)			8.0		A
TOTAL POWER DISSIPATION (Tc=25°C)			40		W
(Ta=25°C)			1.75		W
JUNCTION TEMPERATURE			150		°C
STORAGE TEMPERATURE			-40 to +150		°C

### ELECTRICAL CHARACTERISTICS (Ta=25°C)

		MIN.	MAX.	
COLLECTOR-EMITTER VOLTAGE	V <sub>CEO</sub>			
(I <sub>C</sub> =30mA, I <sub>B</sub> =0)	TIP31, TIP32	40		V
	TIP31A, TIP32A	60		V
	TIP31B, TIP32B	80		V
	TIP31C, TIP32C	100		V
COLLECTOR CUTOFF CURRENT	I <sub>CEO</sub>			
(V <sub>CE</sub> =30V, I <sub>B</sub> =0)	TIP31, 31A, 32, 32A		0.3	mA
(V <sub>CE</sub> =60V, I <sub>B</sub> =0)	TIP31B, 31C, 32B, 32C		0.3	mA
COLLECTOR CUTOFF CURRENT	I <sub>CES</sub>			
(V <sub>CE</sub> =40V, V <sub>EB</sub> =0)	TIP31, TIP32		0.2	mA
(V <sub>CE</sub> =60V, V <sub>EB</sub> =0)	TIP31A, TIP32A		0.2	mA
(V <sub>CE</sub> =80V, V <sub>EB</sub> =0)	TIP31B, TIP32B		0.2	mA
(V <sub>CE</sub> =100V, V <sub>EB</sub> =0)	TIP31C, TIP32C		0.2	mA
EMITTER CUTOFF CURRENT	I <sub>EBO</sub>			
(V <sub>BE</sub> =5V, I <sub>C</sub> =0)			1.0	mA
DC CURRENT GAIN	h <sub>FE</sub>			
(V <sub>CE</sub> =4V, I <sub>C</sub> =1A)		25		
(V <sub>CE</sub> =4V, I <sub>C</sub> =3A)		20	100	
COLLECTOR-EMITTER SATURATION	V <sub>CE (SAT)</sub>			
(I <sub>C</sub> =3A, I <sub>B</sub> =375mA)			1.2	V
BASE-EMITTER ON VOLTAGE	V <sub>BE (ON)</sub>			
(V <sub>CE</sub> =4V, I <sub>C</sub> =3A)			1.8	V
GAIN-BAND WIDTH PRODUCT	f <sub>T</sub>			
(V <sub>CE</sub> =10V, I <sub>C</sub> =0.5A)		3		MHz

### OUTLINE DIMENSION



