



# TIP31C/TIP32C

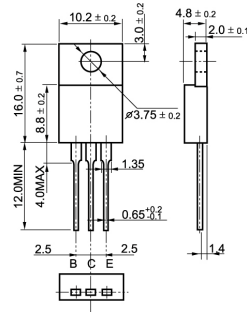
# Silicon Epitaxial Planar Transistor

## GENERAL DESCRIPTION

Complementary, high power transistors in a plastic envelope, primarily for use in audio and general purpose



TO-220



## QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	TYP	MAX	UNIT
$V_{CB0}$	Collector-emitter voltage peak value	$V_{BE} = 0V$	-	100	V
$V_{CEO}$	Collector-emitter voltage (open base)		-	100	V
$I_C$	Collector current (DC)		-	3	A
$I_{CM}$	Collector current peak value		-	5	A
$P_{tot}$	Total power dissipation	$T_{mb} \leq 25^\circ C$	-	40	W
$V_{CEsat}$	Collector-emitter saturation voltage	$I_C = 3A; I_B = 0.4A$	-	1.2	V
$V_F$	Diode forward voltage	$I_F = 3A$	1.5	2.0	V
$t_f$	Fall time	$I_{Csat} = 3.0A; f = 16KHz$	0.5	-	$\mu s$

## LIMITING VALUES

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CESM}$	Collector-emitter voltage peak value	$V_{BE} = 0V$	-	100	V
$V_{CEO}$	Collector-emitter voltage (open base)		-	100	V
$V_{EBO}$	Emitter-base voltage (open collector)		-	5	v
$I_C$	Collector current (DC)		-	3	A
$I_B$	Base current (DC)		-	1	A
$P_{tot}$	Total power dissipation	$T_{mb} \leq 25^\circ C$	-	40	W
$T_{sta}$	Storage temperature		-55	150	$^\circ C$
$T_j$	Junction temperature		-	150	$^\circ C$

## ELECTRICAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	TYP	MAX	UNIT
$I_{CBO}$	Collector-base cut-off current	$V_{CB} = 100V$	-	0.2	mA
$I_{EBO}$	Emitter-base cut-off current	$V_{EB} = 5V$	-	1.0	mA
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C = 1mA$	100	-	v
$V_{CEsat}$	Collector-emitter saturation voltages	$I_C = 3A; I_B = 0.4A$	-	1.2	V
$h_{FE}$	DC current gain	$I_C = 1A; V_{CE} = 5V$	25	-	
$f_T$	Transition frequency at $f = 5MHz$	$I_C = 0.5A; V_{CE} = 10V$	3.0	-	MHz
$C_c$	Collector capacitance at $f = 1MHz$	$V_{CB} = 10V$	85	-	pF
$t_{on}$	On times	$I_C = 3A, I_{B1} = -I_{B2} = 0.3A, V_{CC} = 30V$	0.4	-	us
$t_s$	Turn-off storage time	$I_C = 3A, I_{B1} = -I_{B2} = 0.3A, V_{CC} = 30V$	1.0	-	us
$t_f$	Fall time	$I_C = 3A, I_{B1} = -I_{B2} = 0.3A, V_{CC} = 30V$	0.5	1.0	us