



## 2SC3039

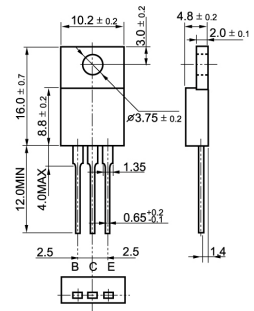
## Silicon Epitaxial Planar Transistor

### GENERAL DESCRIPTION

Silicon NPN high frequency, 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
$V_{CESM}$	Collector-emitter voltage peak value	$V_{BE} = 0V$	-	500	V
$V_{CEO}$	Collector-emitter voltage (open base)		-	300	V
$I_C$	Collector current (DC)		-	7	A
$I_{CM}$	Collector current peak value		-		A
$P_{tot}$	Total power dissipation	$T_{mb} \leq 25^\circ C$	-	50	W
$V_{CEsat}$	Collector-emitter saturation voltage	$I_C = 3.0A; I_B = 0.3A$	-	2	V
$V_F$	Diode forward voltage	$I_F = 3.0A$	1.5	2.0	V
$t_f$	Fall time	$I_C = 3A, I_{B1} = -I_{B2} = 0.3A, V_{CC} = 60V$	0.4	1.0	$\mu s$

### LIMITING VALUES

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CESM}$	Collector-emitter voltage peak value	$V_{BE} = 0V$	-	500	V
$V_{CEO}$	Collector-emitter voltage (open base)		-	300	V
$V_{EBO}$	Emitter-base voltage (open collector)			5	V
$I_C$	Collector current (DC)		-	7	A
$I_B$	Base current (DC)		-	2	A
$P_{tot}$	Total power dissipation	$T_{mb} \leq 25^\circ C$	-	50	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	$V_{CB} = 400V$	-	0.2	mA
$I_{EBO}$	Emitter-base cut-off current	$V_{EB} = 5V$	-	0.2	mA
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C = 1mA$	300		V
$V_{CEsat}$	Collector-emitter saturation voltages	$I_C = 2.0A; I_B = 0.5A$	-	2	V
$h_{FE}$	DC current gain	$I_C = 0.8A; V_{CE} = 5V$	15	100	
$f_T$	Transition frequency at $f = 5MHz$	$I_C = 1A; V_{CE} = 12V$	25	-	MHz
$C_c$	Collector capacitance at $f = 1MHz$	$V_{CB} = 10V$	120	-	pF
$t_{on}$	On times	$I_C = 3A, I_{B1} = -I_{B2} = 0.3A, V_{CC} = 60V$		1.0	us
$t_s$	Turn-off storage time	$I_C = 3A, I_{B1} = -I_{B2} = 0.3A, V_{CC} = 60V$		2.5	us
$t_f$	Fall time	$I_C = 3A, I_{B1} = -I_{B2} = 0.3A, V_{CC} = 60V$	0.4	1.0	us