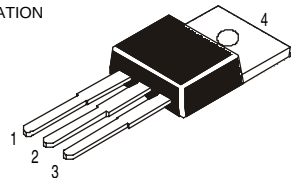
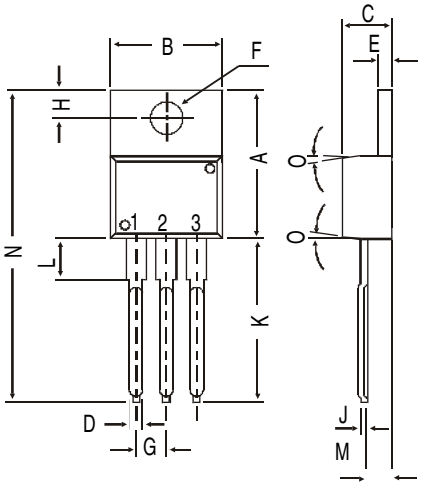
TO-220 Plastic Package **CSC3039**

CSC3039 NPN PLASTIC POWER TRANSISTOR

Switching Regulator Applications

PIN CONFIGURATION
1. BASE
2. COLLECTOR
3. EMITTER
4. COLLECTOR





All diminsions in mm.

DIM	MIN.	MAX.
A	14.42	16.51
B	9.63	10.67
C	3.56	4.83
D		0.90
E	1.15	1.40
F	3.75	3.88
G	2.29	2.79
H	2.54	3.43
J		0.56
K	12.70	14.73
L	2.80	4.07
M	2.03	2.92
N		31.24
O	DEG 7	

ABSOLUTE MAXIMUM RATINGS

Collector-base voltage (open emitter)	V_{CBO}	*max.*	*500 V*
Collector-emitter voltage (open base)	V_{CEO}	*max.*	*400 V*
Collector current	I_C	*max.*	*7.0 A*
Total power dissipation up to T_C = 25°C	P_{tot}	*max.*	*50 W*
Junction temperature	T_j	*max.*	*150 °C*
Collector-emitter saturation voltage			
I_C = 4A; I_B = 0.8A	V_{CEsat}	*max.*	*1.0 V*
D.C. current gain			
I_C = 0.8 A; V_{CE} = 5 V	h_{FE}	*min*	*15*

RATINGS *(at T_A=25°C unless otherwise specified)*

Limiting values			
Collector-base voltage (open emitter)	V_{CBO}	*max.*	*500 V*
Collector-emitter voltage (open base)	V_{CEO}	*max.*	*400 V*
Emitter-base voltage (open collector)	V_{EBO}	*max.*	*7.0 V*
Collector current	I_C	*max.*	*7.0 A*
Collector current (Peak)	I_{CP}	*max.*	*14 A*
Base current	I_B	*max.*	*3 A*

Total power dissipation up to T_C = 25°C	P_{tot}	*max.*	*50 W*
Total power dissipation up to T_A = 25°C	P_{tot}	*max.*	*1.75 W*
Junction temperature	T_j	*max.*	*150 °C*
Storage temperature	T_{stg}		*–65 to +150 °C*

CHARACTERISTICS

T_{amb} = 25°C unless otherwise specified

Collector cutoff current			
I_E = 0; V_{CB} = 400V	I_{CBO}	*max.*	*10 µA*
Emitter cut-off current			
I_C = 0; V_{EB} = 5V	I_{EBO}	*max.*	*10 µA*
Breakdown voltages			
I_C = 5 mA; I_B = 0	$V_{CEO(sus)}$*	*min.*	*400 V*
I_C = 1 mA; I_E = 0	V_{CBO}	*min.*	*500 V*
I_E = 1 mA; I_C = 0	V_{EBO}	*min.*	*7.0 V*
Saturation voltages			
I_C = 4 A; I_B = 0.8 A	V_{CEsat}*	*max.*	*1.0 V*
	V_{BEsat}*	*max.*	*1.5 V*
D.C. current gain			
I_C = 0.8A; V_{CE} = 5V	h_{FE}*	*min.*	*15*
I_C = 4A; V_{CE} = 5V	h_{FE}*	*min.*	*8*
Transition frequency			
I_C = 0.8A; V_{CE} = 10V	f_T	*typ.*	*20 MHz*
Output capacitance f = 1 MHz			
I_E = 0; V_{CB} = 10V	C_o	*typ.*	*80 pF*

Switching time

I_C = 5A; I_{B1} = I_{B2} = –1A
R_L = 40Ω; V_{CC} = 200V

Turn on time	t_{on}	*max.*	*1.0 µs*
Storage time	t_{stg}	*max.*	*2.5 µs*
Fall time	t_f	*max*	*1.0 µs*

** Pulse test: pulse width ≤ 300 µs; duty cycle ≤ 2%.*
(1) PW ≤ 300 µs; duty cycle ≤ 10%.

Customer Notes

Disclaimer

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