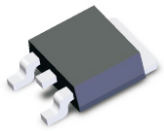
CDBD2SC6650-G

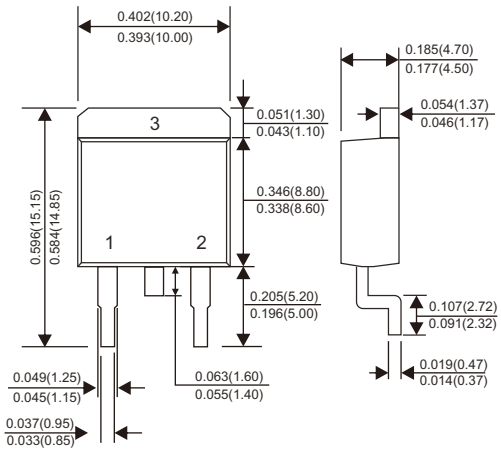
Reverse Voltage: 650 V
Forward Current: 6 A
RoHS Device



Features

- Rated to 650V at 6 Amps
- Short recovery time.
- High speed switching possible.
- High frequency operation.
- High temperature operation.
- Temperature independent switching behaviour.
- Positive temperature coefficient on V_F.

TO-263/D2PAK

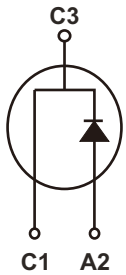


Dimensions in inches and (millimeters)

Mechanical data

- Case: TO-263/D2PAK, molded plastic.
- Terminals: Solderable per MIL-STD-750, method 2026.

Circuit Diagram



Maximum Ratings (at T_A=25°C, unless otherwise noted)

Parameter	Conditions	Symbol	Value	Unit
Repetitive peak reverse voltage		V_{RRM}	650	V
Surge peak reverse voltage		V_{RSM}	650	V
DC blocking voltage		V_{DC}	650	V
Continuous forward current	T_C = 150°C	I_F	6	A
Repetitive peak forward surge current	Tc = 25°C, tp = 10ms Half sine wave, D = 0.3	I_{FRM}	30	A
Non-repetitive peak forward surge current	Tc = 25°C, tp = 10ms Half sine wave	I_{FSM}	60	A
Power dissipation	T_C = 25°C	P_{TOT}	85.8	W
	T_C = 110°C		37.2	
Typical thermal resistance	Junction to case	$R_{\theta JC}$	1.748	°C/W
Operating junction temperature range		T_J	-55 ~ +175	°C
Storage temperature range		T_{STG}	-55 ~ +175	°C

Electrical Characteristics (at T_A=25°C, unless otherwise noted)

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Forward voltage	I_F = 6A, T_j = 25°C	V_F		1.44	1.7	V
	I_F = 6A, T_j = 175°C			1.73	2.5	
Reverse current	V_R = 650V, T_j = 25°C	I_R		10	100	μA
	V_R = 650V, T_j = 175°C			15	200	
Total capacitive charge	V_R = 400V, T_j = 150°C $Q_C = \int_0^{V_R} C(V)\,dv$	Q_C		23		nC
Total capacitance	V_R = 0V, T_j = 25°C, f = 1MHz	C		424	434	pF
	V_R = 200V, T_j = 25°C, f = 1MHz			44	45	
	V_R = 400V, T_j = 25°C, f = 1MHz			42.5	43	

Rating and Characteristics Curves (CDBD2SC6650-G)

Fig.1 - Forward Characteristics

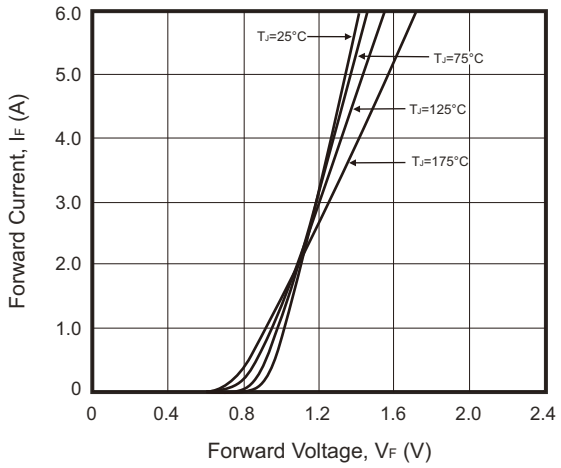


Fig.2 - Reverse Characteristics

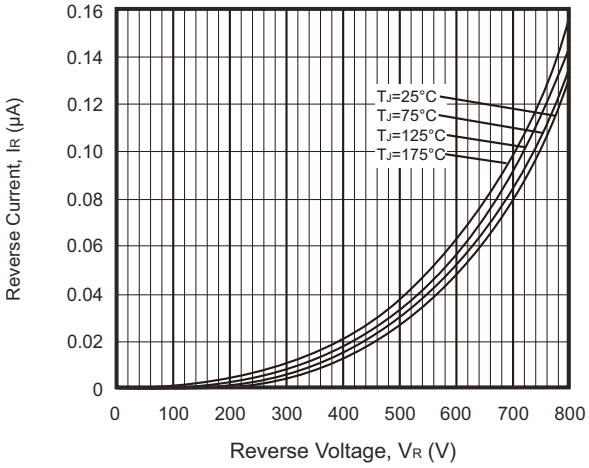


Fig.3 - Current Derating

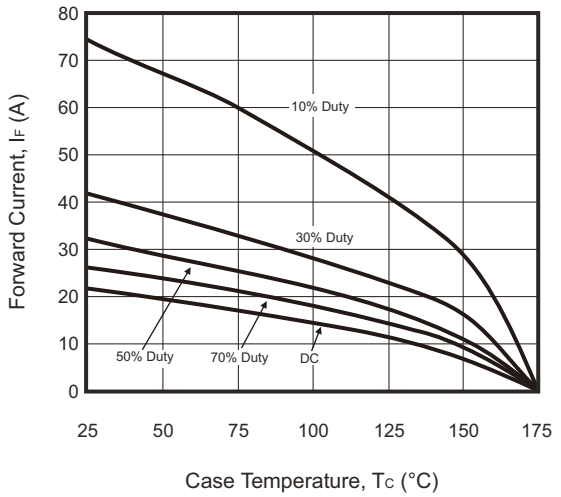
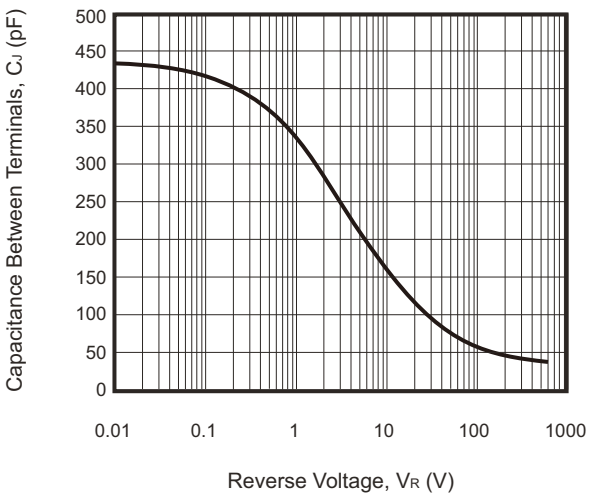


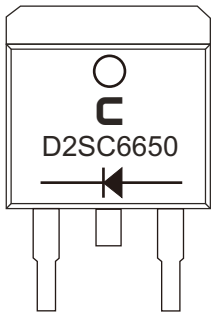
Fig.4 - Capacitance Characteristics



Company reserves the right to improve product design , functions and reliability without notice. REV:B

Marking Code

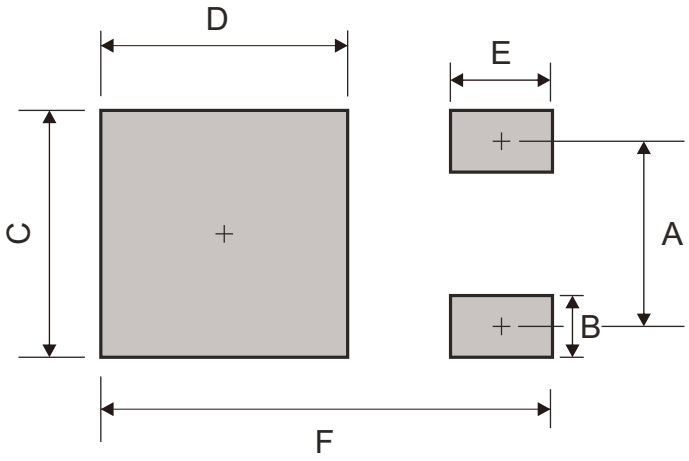
Part Number	Marking Code
CDBD2SC6650-G	D2SC6650



⊂ = Comchip Logo

Suggested PAD Layout

SIZE	TO-263 / D2PAK	
	(mm)	(inch)
A	5.08	0.200
B	1.10	0.043
C	10.80	0.425
D	8.30	0.327
E	3.50	0.138
F	16.90	0.665



Standard Packaging

Case Type	TUBE PACK	
	TUBE (pcs)	BOX (pcs)
TO-263/D2PAK	50	1,000