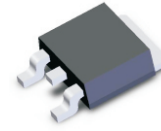


CDBDSC51200-G

Reverse Voltage: 1200 V

Forward Current: 5 A

RoHS Device

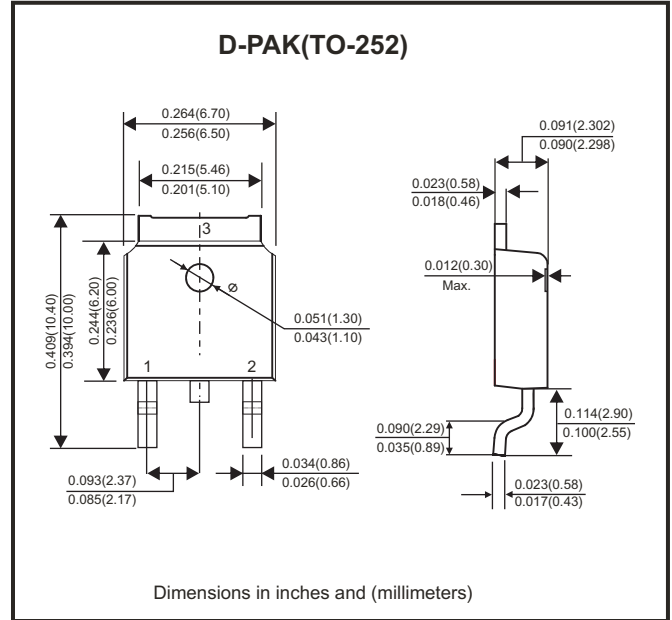


Features

- Rated to 1200V at 5 Amps
- Short recovery time
- High speed switching possible
- High frequency operation.
- High temperature operation.
- Temperature independent switching behaviour.
- Positive temperature coefficient on V_f

Mechanical data

- Case: TO-252/D-PAK, molded plastic.
- Terminals: Solderable per MIL-STD-750, method 2026.



Circuit Diagram



Maximum Ratings (at $T_A=25^\circ\text{C}$, unless otherwise noted)

Parameter	Conditions	Symbol	Value	Unit
Repetitive peak reverse voltage		V_{RRM}	1200	V
Surge peak reverse voltage		V_{RSM}	1200	V
DC bolcking voltage		V_{DC}	1200	V
Continuous forward current	$T_C = 25^\circ\text{C}$	I_F	18	A
	$T_C = 135^\circ\text{C}$		8.5	
	$T_C = 155^\circ\text{C}$		5	
Repetitive peak forward surge crurent	$T_C = 25^\circ\text{C}$, $t_p = 10\text{ms}$ Half sine wave, $D = 0.3$	I_{FRM}	25	A
Non-repetitive peak forward surge current	$T_C = 25^\circ\text{C}$, $t_p = 10\text{ms}$ Half sine wave	I_{FSM}	50	A
Power dissipation	$T_C = 25^\circ\text{C}$	P_{TOT}	109.5	W
	$T_C = 110^\circ\text{C}$		47	
Typical thermal resistance	Junction to case	$R_{\theta JC}$	1.37	$^\circ\text{C/W}$
Operating junction temperature range		T_J	-55 ~ +175	$^\circ\text{C}$
Storage temperature range		T_{STG}	-55 ~ +175	$^\circ\text{C}$

Electrical Characteristics (at $T_A=25^\circ\text{C}$, unless otherwise noted)

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Forward voltage	$I_F = 5\text{A}, T_J = 25^\circ\text{C}$	V_F		1.45	1.7	V
	$I_F = 5\text{A}, T_J = 175^\circ\text{C}$			2.05	2.5	
Reverse current	$V_R = 1200\text{V}, T_J = 25^\circ\text{C}$	I_R		20	100	μA
	$V_R = 1200\text{V}, T_J = 175^\circ\text{C}$			50	200	
Total capacitive charge	$V_R = 800\text{V}, T_J = 150^\circ\text{C}$ $Q_C = \int_0^{V_R} C(V) dv$	Q_C		36		nC
Total capacitance	$V_R = 0\text{V}, T_J = 25^\circ\text{C}, f = 1\text{MHz}$	C		475	510	pF
	$V_R = 400\text{V}, T_J = 25^\circ\text{C}, f = 1\text{MHz}$			34	44	
	$V_R = 800\text{V}, T_J = 25^\circ\text{C}, f = 1\text{MHz}$			33	40	

RATING AND CHARACTERISTIC CURVES (CDBDSC51200-G)

Fig.1 - Forward IV Characteristics as Function of T_J :

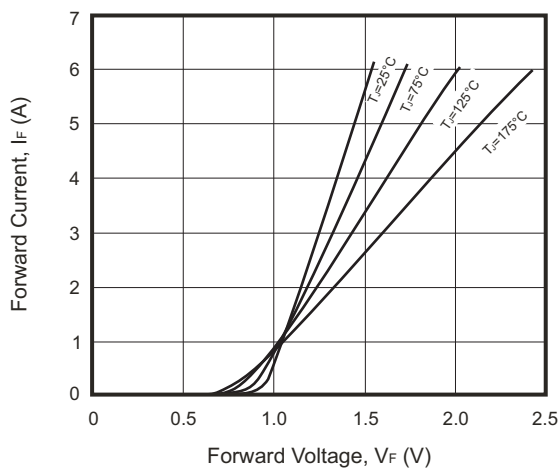


Fig.2 - Reverse IV Characteristics as Function of T_J :

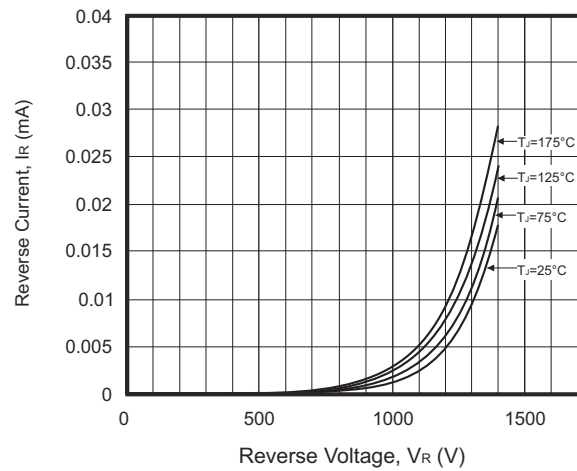


Fig.3 - Current Derating

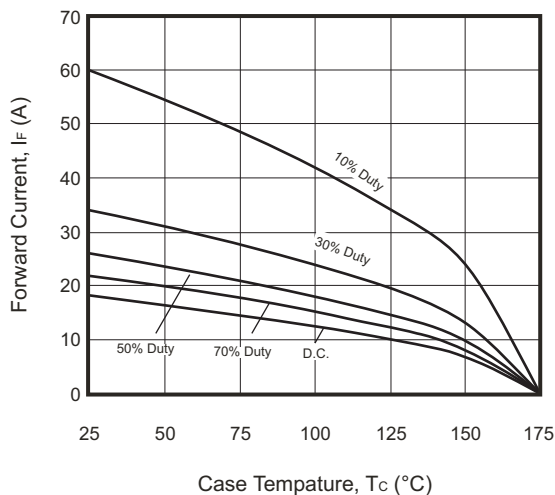
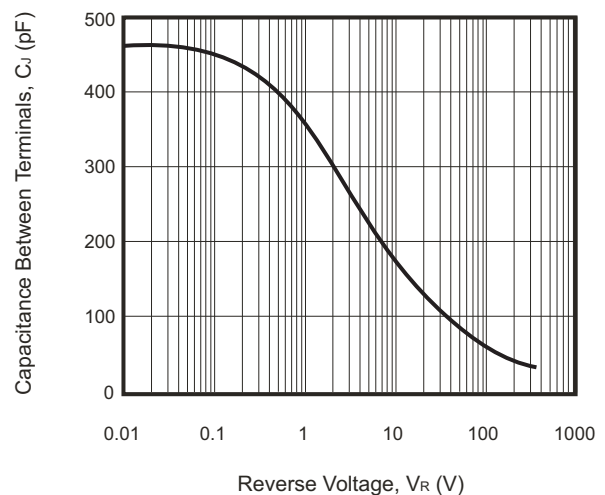
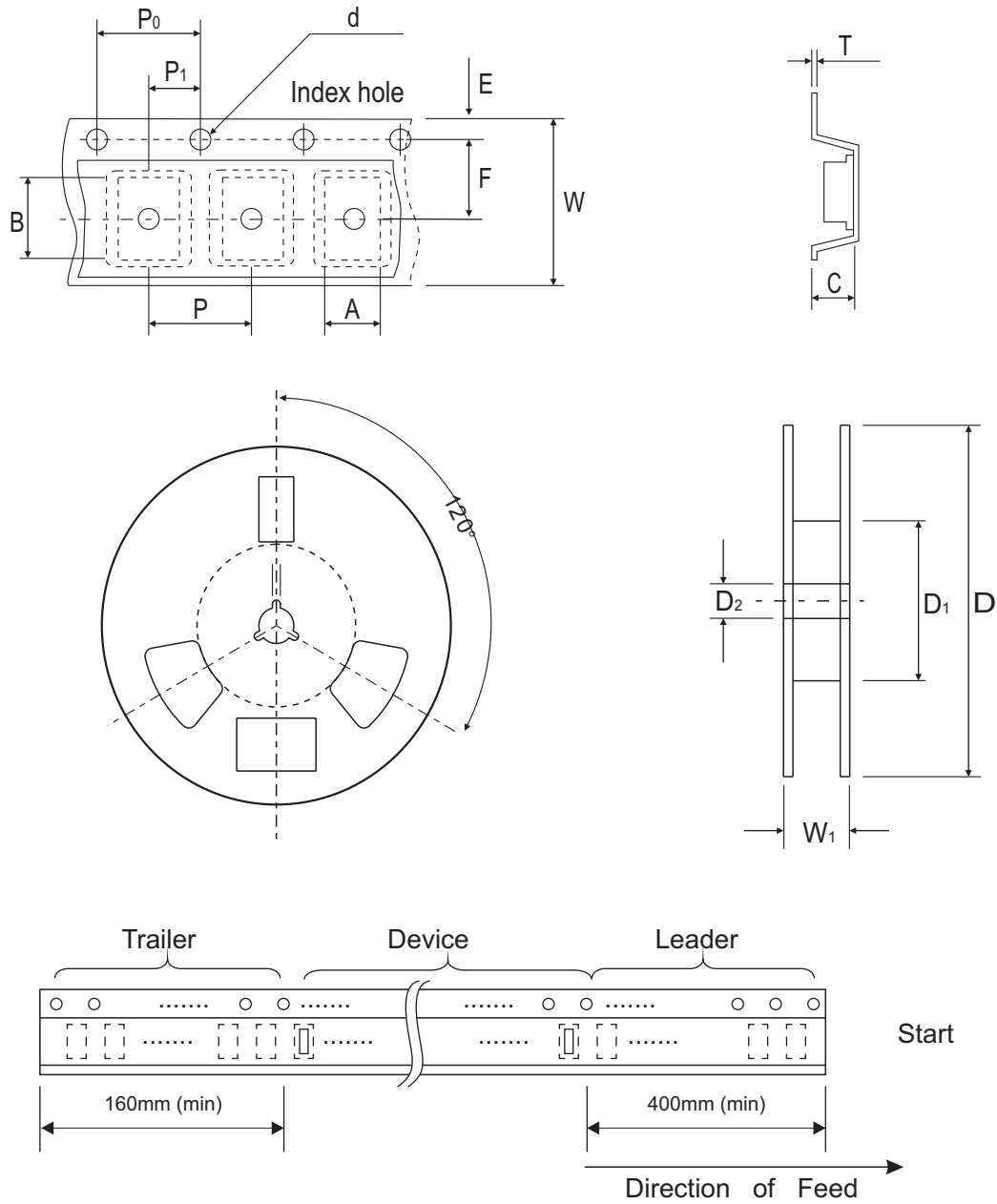


Fig.4 - Capacitance vs. Reverse Voltage



Reel Taping Specification

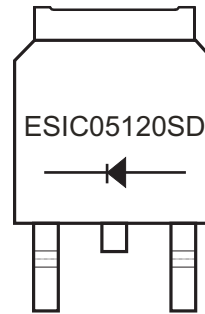


	SYMBOL	A	B	C	d	D	D ₁	D ₂
TO-252/D-PAK	(mm)	6.96 ± 0.10	10.49 ± 0.10	2.79 ± 0.10	1.55 ± 0.05	330.00 ± 2.00	76.50 + 2.00 - 0.00	13.30 ± 1.00
	(inch)	0.274 ± 0.004	0.413 ± 0.004	0.110 ± 0.004	0.061 ± 0.002	12.992 ± 0.079	3.012 + 0.079 - 0.00	0.524 ± 0.039

	SYMBOL	E	F	P	P ₀	P ₁	W	W ₁
TO-252/D-PAK	(mm)	1.75 ± 0.10	7.50 ± 0.10	8.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	16.00 ± 0.20	21.00 Max.
	(inch)	0.069 ± 0.004	0.295 ± 0.004	0.315 ± 0.004	0.157 ± 0.004	0.079 ± 0.004	0.630 ± 0.008	0.827 Max.

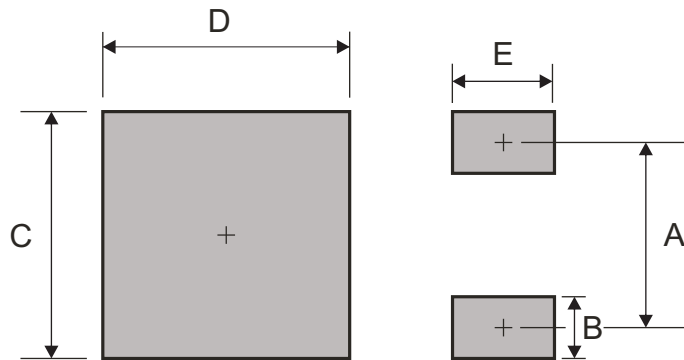
Marking Code

Part Number	Marking Code
CDBDSC51200-G	ESIC05120SD



Suggested PAD Layout

SIZE	TO-252 / DPAK	
	(mm)	(inch)
A	4.57	0.180
B	1.20	0.047
C	5.80	0.228
D	5.85	0.230
E	2.00	0.079



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	REEL SIZE (inch)
TO-252/D-PAK	2,500	13