

CDBD640-HF

Reverse Voltage: 40 V

Forward Current: 6 A

RoHS Device

Halogen Free

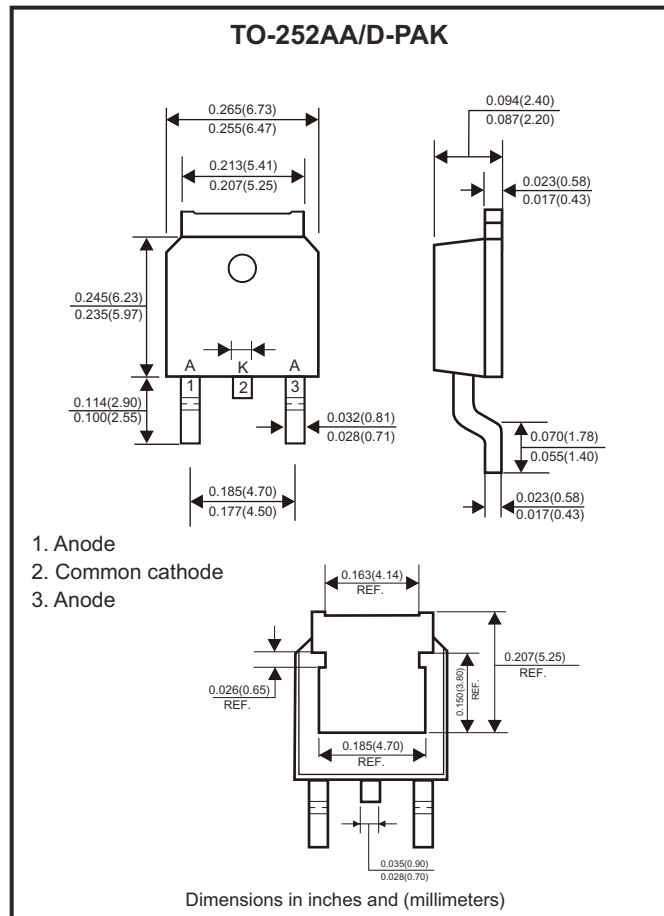


Features

- Excellent power dissipation offers better reverse leakage current and thermal resistance.
- Low Profile surface mount application in order to optimize board space.
- Metal silicon junction, major carrier conduction.
- 6A total (3A per diode leg).
- Guarding for over voltage protection.
- Low power loss, high efficiency.
- High surge capability.
- High current capability, low forward voltage drop.
- Ultra-high speed switching.

Mechanical data

- Case: Molded plastic, TO-252.
- Mounting position: Any.
- Terminals: Pure tin plated, lead-free, solderable per MIL-STD-750 method 2026.
- Epoxy: UL 94V-0 rate flame retardant.
- Polarity: indicated by diode symbol.
- Weight: 0.34 grams (approx.).



Maximum Ratings and Electrical Characteristics (Per Diode Leg)

(Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz resistive or inductive load. For capacitive load, derate current by 20%)

Parameter	Conditions	Symbol	MIN.	TYP.	MAX.	Unit
Recurrent peak reverse voltage		V_{RRM}			40	V
RMS voltage		V_{RMS}			28	V
DC blocking voltage		V_{DC}			40	V
Instantaneous forward voltage	$I_F = 3A$	V_F			0.57	V
Average forward rectified current	Per Diode	$I_{F(AV)}$			3	A
	Per Device				6	
Non-repetitive peak forward surge current	8.3ms single half sine-wave superimposed on rate load (JEDEC method)	I_{FSM}			75	A
Maximum DC reverse current at rated DC blocking voltage	$V_R = 40V, T_J = 25^\circ C$	I_R			0.5	mA
	$V_R = 40V, T_J = 125^\circ C$	I_R			20	mA
Thermal resistance	Junction to case (Note 1)	$R_{\theta JC}$		6		°C/W
Operating junction temperature range		T_J	-55		+150	°C
Storage temperature range		T_{STG}	-65		+175	°C

Note: 1. Device mounted on FR-4 substrate, 125mm² copper pad areas.

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

REV:B

Rating and Characteristic Curves (CDBD640-HF)

Fig.1 - Forward Current Derating Curve

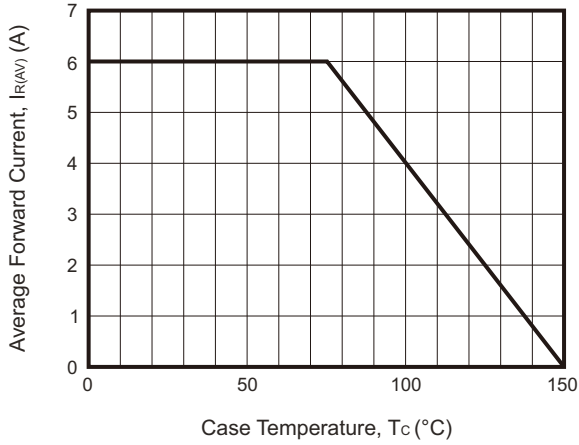


Fig.2 - Maximum Non-Repetitive Forward Surge Current

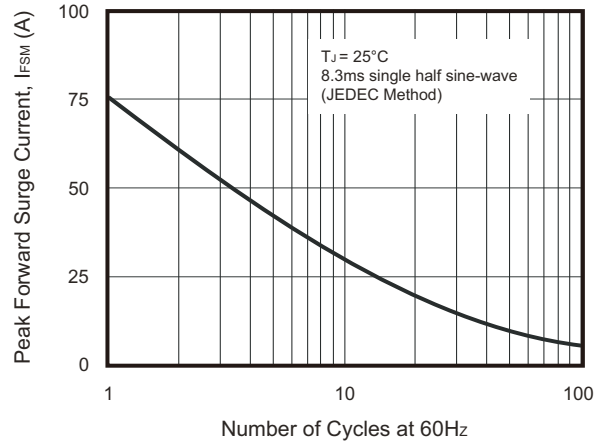


Fig.3 - Forward Current vs Forward Voltage

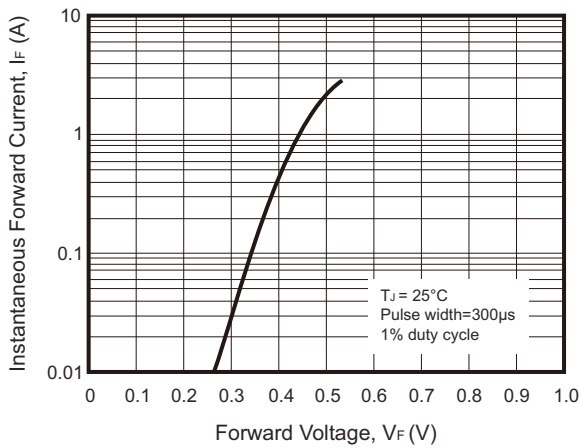
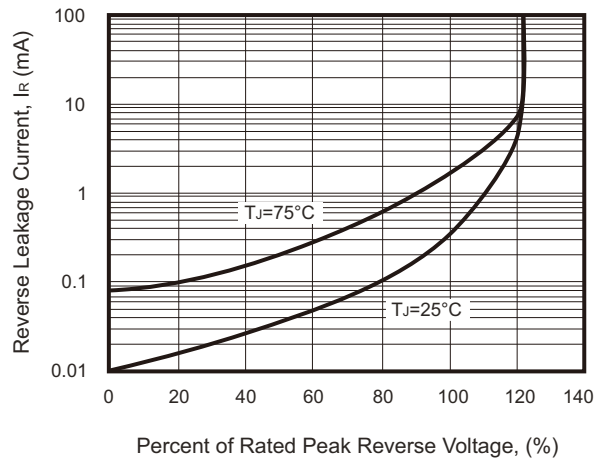
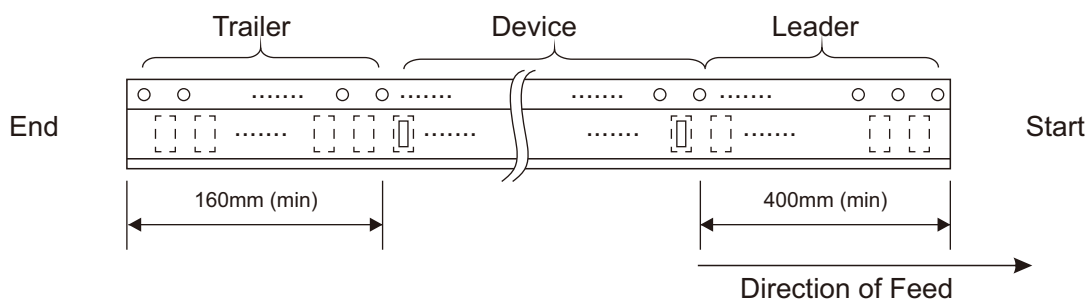
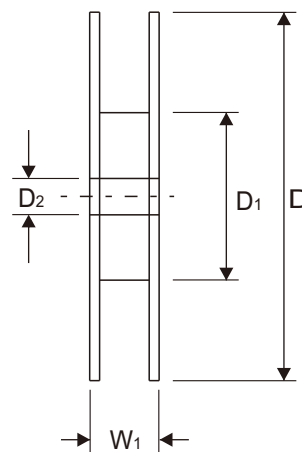
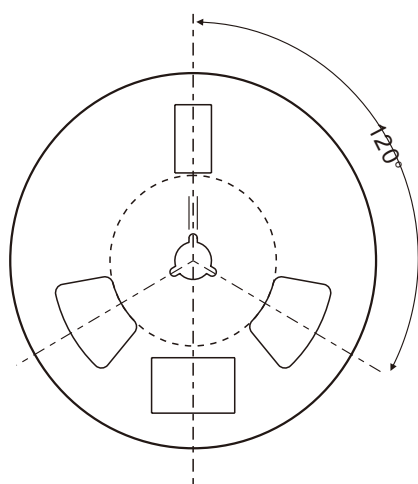
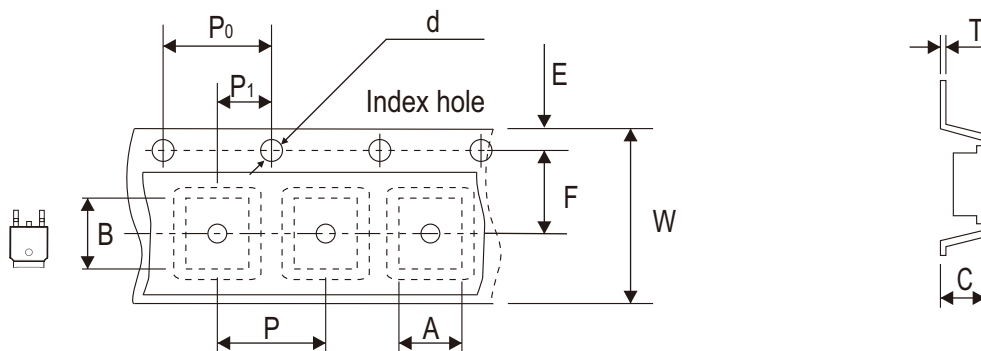


Fig.4 - Reverse Leakage Current vs Reverse Voltage



Reel Taping Specification



	SYMBOL	A	B	C	d	D	D1	D2
TO-252AA/D-PAK	(mm)	10.49 ± 0.10	6.96 ± 0.10	2.79 ± 0.10	1.55 ± 0.10	330.00 ± 2.00	100.00 ± 1.50	2.00 ± 0.50
	(inch)	0.413 ± 0.004	0.274 ± 0.004	0.110 ± 0.004	0.061 ± 0.004	12.992 ± 0.079	3.937 ± 0.059	0.079 ± 0.020

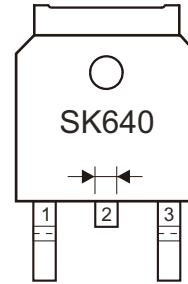
	SYMBOL	E	F	P	P0	P1	W	W1
TO-252AA/D-PAK	(mm)	1.75 ± 0.10	7.50 ± 0.10	8.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	16.00 + 0.30 - 0.10	22.40 ± 0.60
	(inch)	0.069 ± 0.004	0.295 ± 0.004	0.315 ± 0.004	0.157 ± 0.004	0.079 ± 0.004	0.630 + 0.012 - 0.004	0.882 ± 0.024

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REV:B

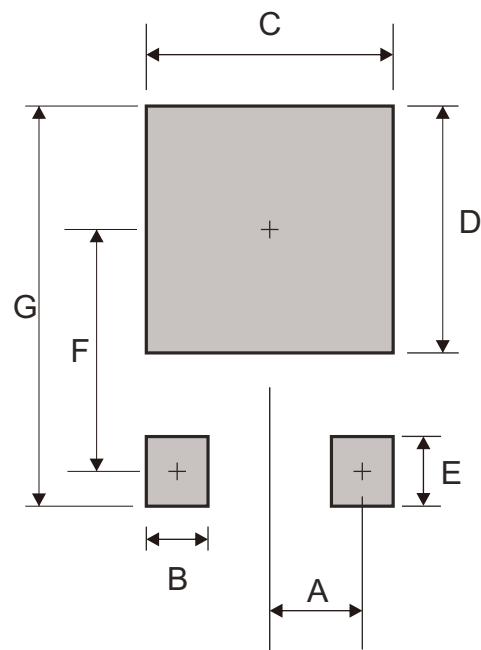
Marking Code

Part Number	Marking Code
CDBD640-HF	SK640



Suggested P.C.B. PAD Layout

SIZE	TO-252AA / D-PAK	
	(mm)	(inch)
A	2.30	0.091
B	1.50	0.059
C	7.00	0.276
D	7.00	0.276
E	2.50	0.098
F	6.90	0.272
G	11.60	0.457



Standard Packaging

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