

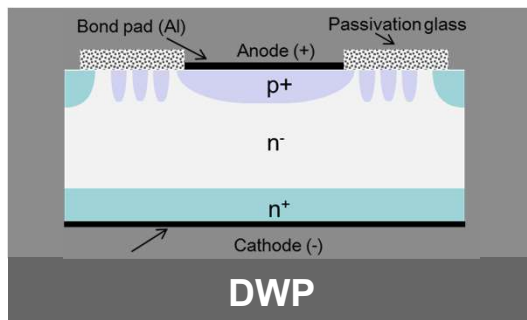


Diode Solutions

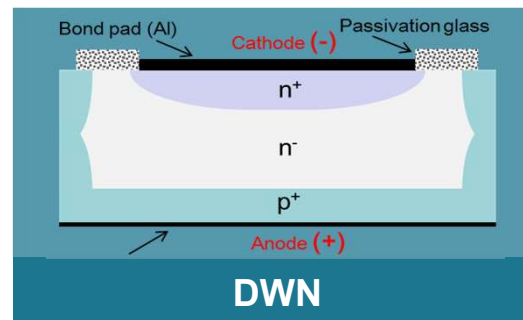
Bare Die

Rectifier Diodes

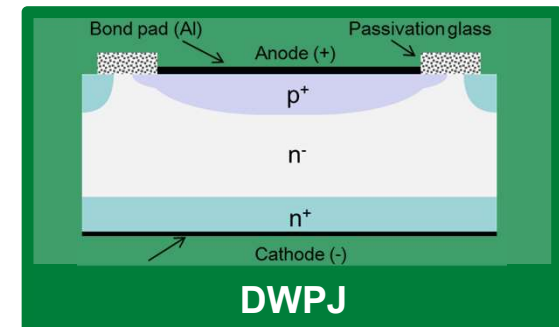
DWN Cathode Top and DWPJ Anode Top Concept – The Perfect Match



- Metal and glass free scribe lines for minimized edge chipping after dicing
- Homogeneous die thickness
- Superior mechanical properties for high yields in assembly processes
- **To be replaced by DWPJ**



- Inverse polarity enables space-saving DCB designs
- PN-junction at die backside provides superior commutation robustness
- High mechanical ruggedness
- High surge current ruggedness, lower V_f and R_{th} due to bigger active area



- Advanced junction termination
- Increased active area
- Higher current density and surge current capability
- **Superior commutation robustness**
- **DWP-successor**

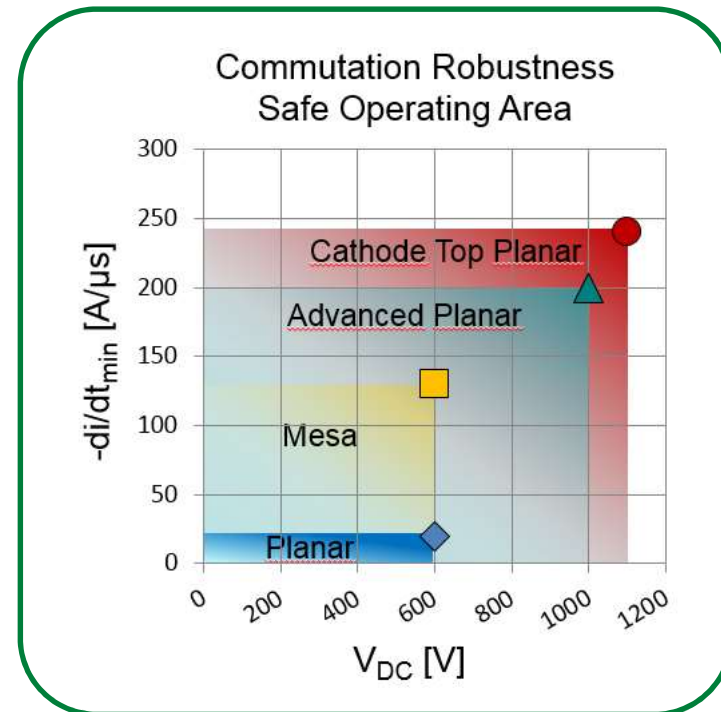
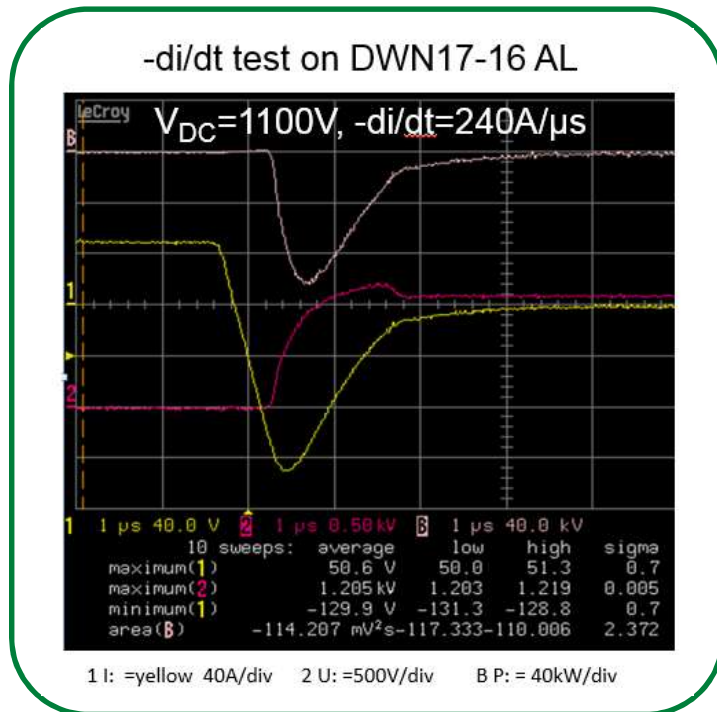
Rectifier Diode Technologies

Best-In-Class Electrical and Mechanical Characteristics

	DWP 17-16 AL	DWPJ18-16 AL	DWN 17-16 AL	Competitor
Polarity	Anode Top	Anode Top	Cathode Top	Anode Top
Passivation Technology	Standard Planar	Advanced Planar	Planar	Mesa (Moat, Beveling)
Die size [mm²]	4.45 x 4.45	4.2 x 4.2	4.45 x 4.45	4.2 x 4.2
V_f [V] *	1.08	1.07	1.07	1.11
V_r [V]	>1600	>1600	typ 2.200	>1600
I_{FSM} [A] **	350	400	400	380
Surge Current density [A/cm²]	17.7	22.7	20.2	21.5
Commutation robustness -di/dt [A/μs]**	~20	>200	>240	~130
T_{jmax}	150	150	150	150
Scribe lines	Metal and glass free	Metal and glass free	Metal and glass free	Diced through glass
Die edge mechanical strength	High	High	High	Low
Al top metal thickness	7μm	7μm	7um	5μm

Rectifier Diodes

Superior Commutation Robustness for Demanding Rectification Applications



Rectifier Diode Portfolio

Customized Designs on Request

P = Standard Polarity (DWP)
 J = Standard Polarity (DWPJ)
 N = Inverse Polarity (DWN)

Current Rating <100 A

	1200 V	1600 V	1800 V	2200 V
8 A	N			
12 A	N	J N	N	
20 A		P J N	P N	
30 A		P J N	P N	
40 A		P J N	P N	N
60 A		P J N	P N	N
75 A		P J N	P N	N

Current Rating >100 A

	1600 V	1800 V	2200 V
115 A	P J N	P N	N
250 A	P J N	P N	N
380 A			N
780 A			N

