

**Improved
2.5kV and 4.5kV
chipsets**

Press-Pack IGBTs

May 2010 Issue 2

Featuring the improved 2.5kV and 4.5 kV chipsets with typically 25% reduced $V_{ce(sat)}$

With a track record spanning more than 10 years as a leading innovator in press-pack IGBT technology, Westcode is proud to offer their range of 2.5kV and 4.5kV devices featuring the next generation chipset offering improved SOA.

This advanced technology is based on an enhanced planar cell design featuring the latest carrier enhancement techniques. Delivering comparable $V_{ce(sat)}$ to modern Trench designs whilst retaining the superior RBSOA, SCSOA performance and easy driving characteristics of traditional planar technology.

When combined with Westcodes proven hermetic press-pack technology, these devices re-define the state-of-the-art for high power switching devices.

In a range of housings with electrode diameters of up to 125mm, we have both reverse conducting and asymmetric blocking types available.

An improved diode chip complements the IGBT and offers breakthrough levels of performance. Choice of diode to IGBT ratio enabling full utilisation of the IGBT in reverse conducting applications.

New third generation HP-SONIC monolithic diode range complements our new asymmetric IGBT range and also supports such applications as multilevel diode clamped converters.

Press-pack IGBTs are now gaining significant market share in the high performance medium voltage drive sector in the 2MW to 30MW range - they offer all of the benefits of conventional IGBTs, and more, over alternative bipolar technology while maintaining the high reliability levels associated with press-pack devices in these systems.

Features and Benefits



The unique solder free, pressure contact construction of the Westcode IGBT offers unequalled reliability over conventional designs.

- Hermetic devices are suitable for all cooling options including direct liquid immersion
- Explosion and rupture safe
- High thermal cycling resistance
- Double side cooling
- Mechanically compatible with GTO thyristors, allowing upgrading of existing equipment and designs to new IGBT technology.

4.5 kV
160 A to 2400 A

2.5 kV
160 A to 2250A



Press-Pack IGBTs - where MegaWatts matter

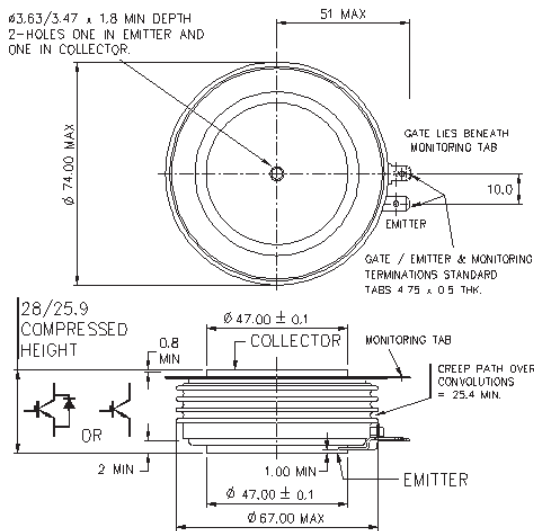


Fig 1 - 47mm Ø pole face

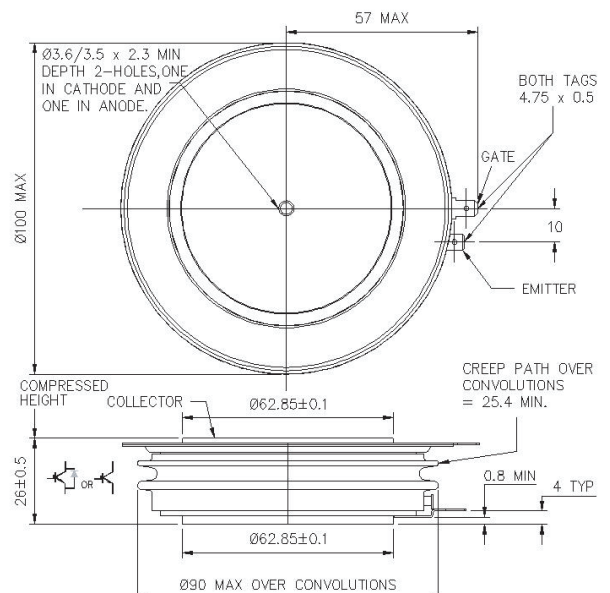


Fig 2 - 63mm Ø pole face

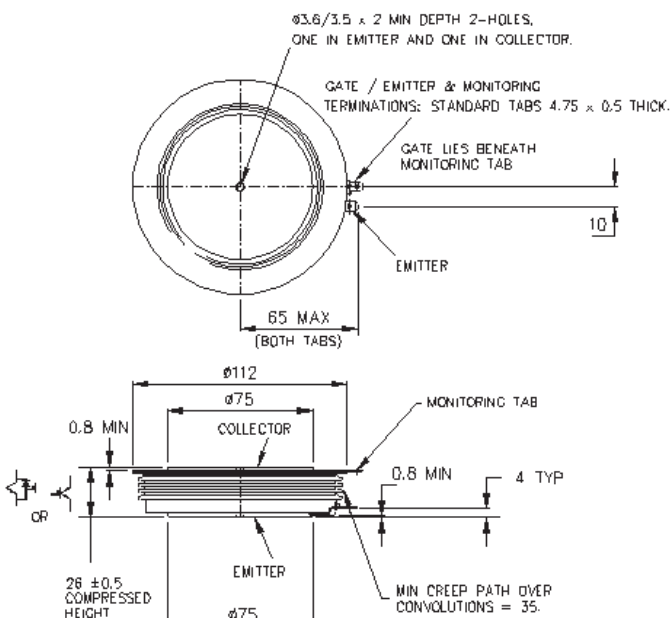


Fig 3 - 75mm Ø pole face

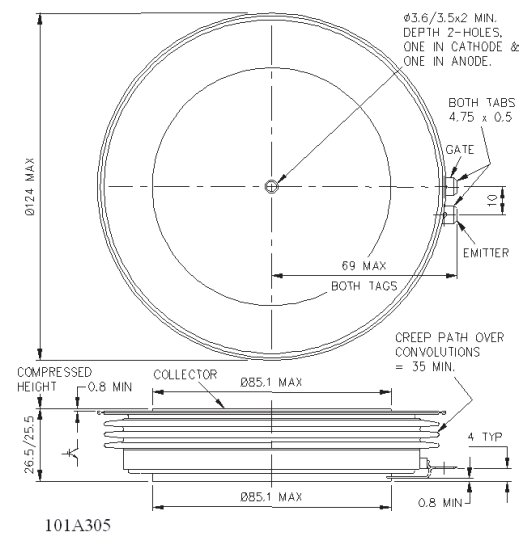


Fig 4 - 85mm Ø pole face

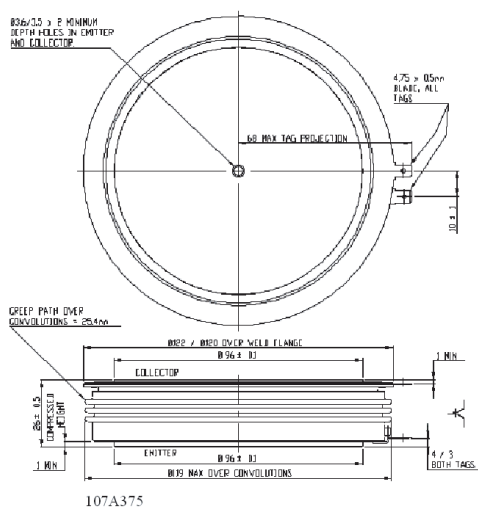


Fig 5 - 96mm Ø pole face

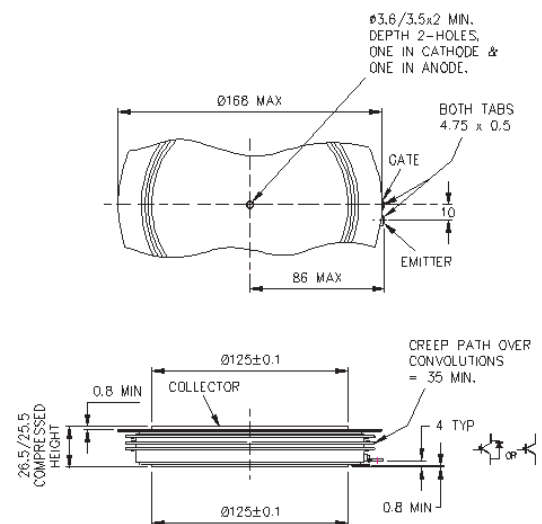


Fig 6 - 125mm Ø pole face

Press-Pack IGBTs ~ the heart of your megawatt drives

Summary Table

Part #	V _{CES} V	I _C A	Typ. V _{CE(sat)} V	Reverse conducting	Ratio diode to IGBT	Typ. V _F V	T _{JM} °C	Outline
T0160NB45A	4500	160	3.3	Yes	3	4.1	125	Fig 1
T0240NB45E	4500	240	3.8	No	n/a	n/a	125	Fig 1
T0340VB45G	4500	340	3.6	Yes	2	3.5	125	Fig 2
T0360NB25A	2500	360	3.1	Yes	2.5	2.4	125	Fig 1
T0500NB25E	2500	500	3.1	No	n/a	n/a	125	Fig 1
T0510VB45E	4500	510	3.6	No	n/a	n/a	125	Fig 2
T0570VB25G	2500	570	3.1	Yes	2	2.3	125	Fig 2
T0600TB45A	4500	600	3.8	Yes	2.5	3.9	125	Fig 3
T0800EB45G	4500	800	3.6	Yes	2	3.5	125	Fig 4
T0800TB45E	4500	800	3.6	No	n/a	n/a	125	Fig 3
T0850VB25E	2500	850	3.1	No	n/a	n/a	125	Fig 2
T0900EB45A	4500	900	3.8	Yes	2.5	3.9	125	Fig 4
T1200EB45E	4500	1200	3.6	No	n/a	n/a	125	Fig 4
T1200TB25A	2500	1200	3.2	Yes	2.5	2.5	125	Fig 3
T1500TB25E	2500	1500	3.1	No	n/a	n/a	125	Fig 3
T1600GB45G	4500	1600	3.6	Yes	2	3.5	125	Fig 6
T1800GB45A	4500	1800	3.8	Yes	2.5	3.9	125	Fig 6
T2250AB25E	2500	2250	3	No	n/a	n/a	125	Fig 5
T2400GB45E	4500	2400	3.6	No	n/a	n/a	125	Fig 6

**4.5kV
Typically
25% reduced
V_{ce(sat)}!**

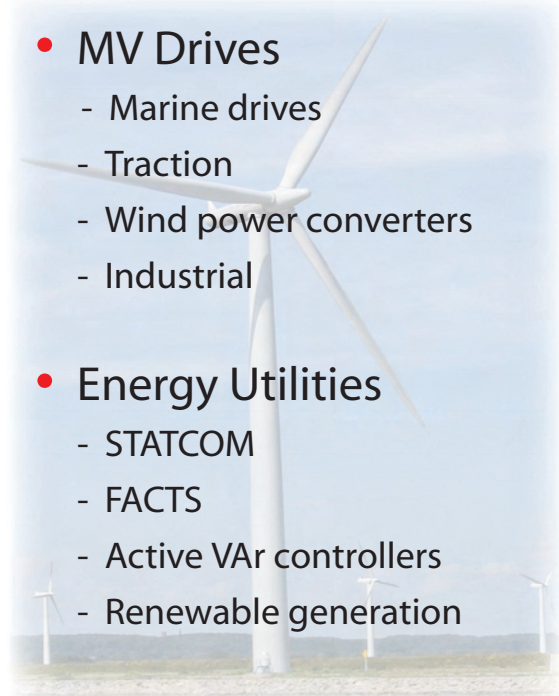


Features

- Improved chipset with even lower losses
- Even wider SOA
 - Up to 4800A turn-off capability at 3kV dc link
- Fully hermetic compression bonded encapsulation
 - Ø47mm to Ø125mm pole face industry standard outlines
 - Increased power density
 - Double side cooling
 - High thermal cycling capability
 - Simple series connection
 - Enhanced rupture rating packages available

Applications

- MV Drives
 - Marine drives
 - Traction
 - Wind power converters
 - Industrial
- Energy Utilities
 - STATCOM
 - FACTS
 - Active VAr controllers
 - Renewable generation



or via our website <http://www.westcode.com/igbt.htm>

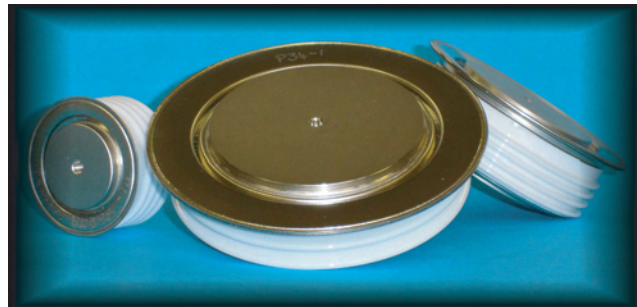
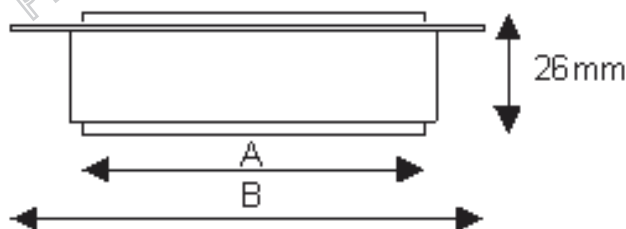
New Third Generation High Power Sonic-FRD

Improved safe operating area (SOA) and reverse recovery characteristics for both 2.5kV and 4.5kV HP-Sonic monolithic diode range complements our new asymmetric IGBT range and also supports such applications as multilevel diode clamped converters.

These diodes incorporate a unique manufacturing process and lifetime control to offer a class leading trade-off between conduction and switching losses. The wide safe operating area makes them ideal as freewheeling diodes for snubberless IGBT and IGCT applications.

Summary Table and Outline dimensions

Part #	V _{rrm} V	T _{JM} °C	Outline	
			A mm	B mm
E0170YH45C	4500	150	25	42
E0460QC45C	4500	150	38	60
E0660NC45C	4500	150	47	74
E1300VF45C	4500	150	63	100
E2400TC45C	4500	150	75	112
E0280YH25C	2500	150	25	42
E0800QC25C	2500	150	38	60
E1200NC25C	2500	150	47	74
E2250VF25C	2500	150	63	100
E4000TC25C	2500	150	75	112



Features

- Robust dynamic characteristics
- di/dt >4000 A/μs
- 150°C operating junction temperature
- Soft fast recovery - No snap off
- Low recovery losses, low forward voltage drop
- Snubberless operation

Applications

- Anti-parallel diodes for IGBTs and IGCTs.
- Clamp and Snubber diodes.
- Any application which requires a fast low loss diode.
- Ideally suited for
 - Traction,
 - Medium Voltage drives
 - Renewables
 - Induction heating
 - Pulsed power applications.

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