



IGBT HV Modules Family

With CRRC's Own DMOS+ IGBT chips inside, to be expanded...



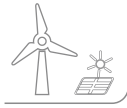
Railway



Power Grid



Marine Drive



Renewables



Automotive



SVG



Motor Drive

Key Features

- Enhanced soft punch through planar gate (DMOS+) IGBT chip
- Low $V_{ce(sat)}$ with positive Temperature coefficient
- High DC stability, high short circuit capability
- Advanced ultrasonic wire-bonding and soldering uniformity control
- Optimized structure design with low stray inductance

Benefits for Customer

- Competitive thermal / electrical performance
- High Power cycling capability
- Improved robustness
- Excellent long term reliability

Part Number	Configuration	Production staus	Ic (A)	at Tc (°C)	$V_{ce(sat)}$ @ Tc=25°C (V)	Total E_{sw} @ Tc=125°C (mJ)	$R_{th(j-c)}$ (per switch) (°C/kW)	Baseplate Dims (mm)	Isolation Voltage	Tech
3300V IGBT Modules										
TIM1500ESM33-PSA011	Single Switch	NEW	1500	95	2.1	6400	8	190 x 140	6 kV	DMOS+
TIM1800E2SM33-TSA000	Single Switch	NEW	1800	110	2.1	6220	8	190 x 140	6 kV	DMOS+
4500V IGBT Modules										
TIM1200ESM45-PSA011	Single Switch	NEW	1200	85	2.3	10810	8	190 x 140	6 kV	DMOS+
6500V IGBT Modules										
TIM750ASM65-PSA011	Single Switch	NEW	750	80	3.0	10200	8.5	190 x 140	10.2 kV	DMOS+



IGBT LV Modules Family

With CRRC's Own TMOS+ IGBT chips, to be expanded...



Key Features

- Trench / Field Stop / Carrier Storage (TMOS+) IGBT chip
- High current density with large safe-operating area
- Advance Ultrasonic wire-bonding and sintering uniformity control
- Enhanced Al₂O₃ substrates and AlSiC baseplate
- Optimized structure design with low stray inductance

Benefits for Customer

- Competitive thermal / electrical performance
- High Power cycling capability
- Improved robustness
- Excellent long term reliability

Part Number	Configuration	Production staus	I _c (A)	at T _c (°C)	V _{CE(sat)} @ T _c =25°C (V)	Total E _{sw} @ T _c =125°C (mJ)	R _{th(j-c)} (per switch) (°C/kW)	Baseplate Dims (mm)	Isolation Voltage	Tech
750V IGBT Modules										
TG800FF08S1-S3A00	Six-Pack	NEW	550	75	1.45	48.2	100	213 x 97	2.5kV	TMOS+
TG600FF08S3-S3A00	Six-Pack	NEW	360	80	1.35	37.2	134	152 x 92	2.5 kV	TMOS+
1200V IGBT Modules										
TG450HF12M1-S3A00	Half Bridge	NEW	450	95	1.65	78	52	122 x 62	2.5 kV	TMOS+
TG600HF12M1-S3A00	Half Bridge	NEW	600	85	1.47	147	49	122 x 62	2.5kV	TMOS+
1700V IGBT Modules										
TG450HF17M1-S300	Half Bridge	NEW	450	85	1.8	276	55	122 x 62	3.4kV	TMOS+
TG1000HF17H1-S300	Half Bridge	NEW	1000	100	1.85	745	20	250 x 89	4 kV	TMOS+



FlexPack™ IGBT Family

With CRRC's Own DMOS+ IGBT chips, to be expanded...



Key Features

- Enhanced soft punch through planar gate (DMOS+) IGBT chip
- High current density with large safe-operating area
- Flexible press-pack technology to realize pressure uniformity
- Silver sintering technology to improve power cycling capability
- Hermetically-sealed housing for rupture-resistant packaging
- Short circuit failure mode

Benefits for Customer

- Low $V_{ce(sat)}$, low power losses
- Soft turn-off with low overvoltage
- Easy clamping for series connection
- Improved robustness
- Excellent long term reliability

Part Number	Configuration	Production staus	Ic (A)	at Tc (°C)	$V_{CE(sat)}$ @ Tc=25°C (V)	Total E_{sw} @ Tc=125°C (mJ)	$R_{th(j-c)}$ (per switch) (°C/kW)	Baseplate Dims (mm)	Isolation Voltage	Tech
TG3000SW45ZC-P200	co-pack	NEW	3000	90	2.65	34	3	204 x 204	-	DMOS+
TG2000SW45ZC-P200	co-pack	NEW	2000	90	2.65	22.9	4.3	204x 204	-	DMOS+