

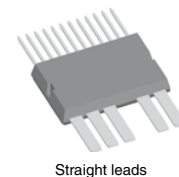
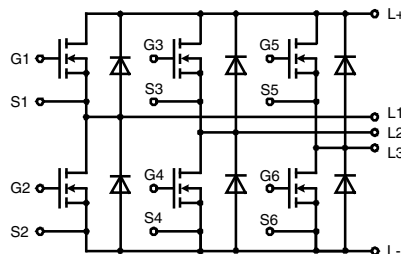
Three phase full Bridge

with Trench MOSFETs
in DCB isolated high current package

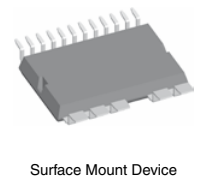
$$V_{DSS} = 85 \text{ V}$$

$$I_{D25} = 103 \text{ A}$$

$$R_{DSon \text{ typ.}} = 5.5 \text{ m}\Omega$$



Straight leads



Surface Mount Device

MOSFETs

Symbol	Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ\text{C to } 150^\circ\text{C}$	85	V
V_{GS}		± 20	V
I_{D25}	$T_C = 25^\circ\text{C}$	103	A
I_{D90}	$T_C = 90^\circ\text{C}$	77	A
I_{D110}	$T_C = 110^\circ\text{C}$	68	A
I_{F25}	$T_C = 25^\circ\text{C (diode)}$	tbd	A
I_{F90}	$T_C = 90^\circ\text{C (diode)}$	tbd	A
I_{F110}	$T_C = 110^\circ\text{C (diode)}$	tbd	A

Symbol	Conditions	Characteristic Values				
		(T _J = 25°C, unless otherwise specified)				
		min.	typ.	max.		
R _{DSon} ¹⁾	on chip level at V _{GS} = 10 V; I _D = 75 A		5.5 12.7	6.2	mΩ mΩ	
V _{GS(th)}	V _{DS} = 20 V; I _D = 250 μA	2.0		4.0	V	
I _{DSS}	V _{DS} = V _{DSS} ; V _{GS} = 0 V			5	μA μA	
			100			
I _{GSS}	V _{GS} = ± 20 V; V _{DS} = 0 V			0.2	μA	
Q _g Q _{gs} Q _{gd}	V _{GS} = 10 V; V _{DS} = 42 V; I _D = 75 A		114 30 35		nC nC nC	
t _{d(on)} t _r t _{d(off)} t _f		inductive load V _{GS} = 10 V; V _{DS} = 42 V I _D = 75 A; R _G = 39 Ω; T _J = 125°C		tbd tbd tbd tbd		ns ns ns ns
E _{on} E _{off} E _{rec off}				tbd tbd tbd		mJ mJ mJ
R _{thJC} R _{thJH}	with heat transfer paste (IXYS test setup)			1.3 1.6	1.0 1.6	K/W K/W

¹⁾ $V_{DS} = I_D \cdot (R_{DS(on)} + R_{Pin \text{ to Chip}})$

Applications

AC drives

- in automobiles
 - electric power steering
 - starter generator
- in industrial vehicles
 - propulsion drives
 - fork lift drives
- in battery supplied equipment

Features

- MOSFETs in trench technology:
 - low R_{DSon}
 - optimized intrinsic reverse diode
- package:
 - high level of integration
 - high current capability 300 A max.
 - aux. terminals for MOSFET control
 - terminals for soldering or welding connections
 - isolated DCB ceramic base plate with optimized heat transfer
- Space and weight savings

Package options

- 2 lead forms available
 - straight leads (SL)
 - SMD lead version (SMD)

Source-Drain Diode

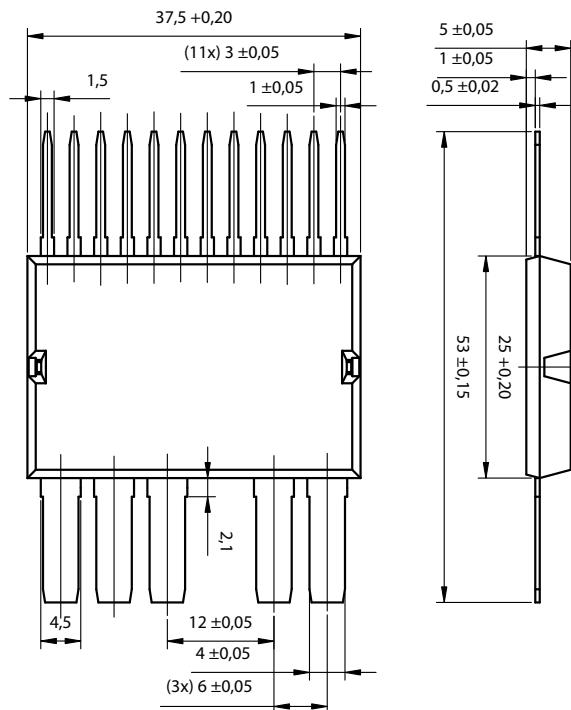
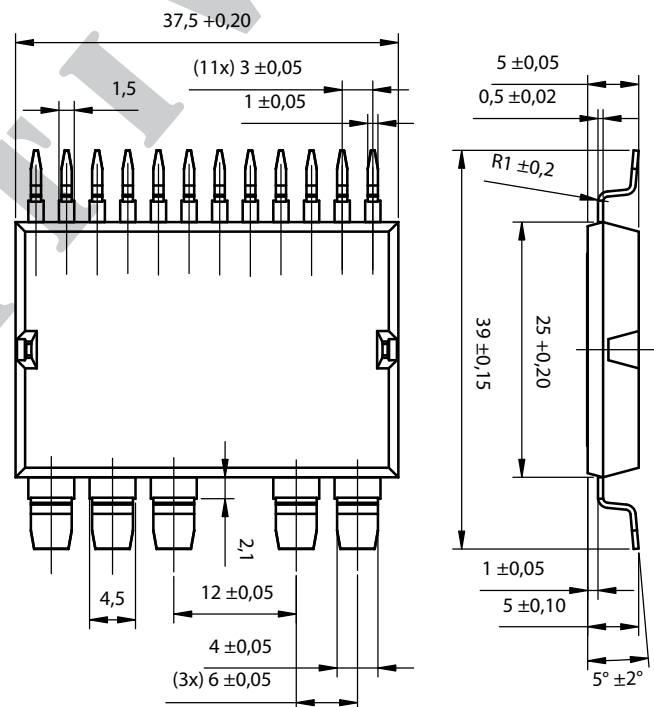
Symbol	Conditions	Characteristic Values			
		min.	typ.	max.	
V_{SD}	(diode) $I_F = 100\text{ A}$; $V_{GS} = 0\text{ V}$		0.9	1.2	V
t_{rr}	$I_F = 100\text{ A}$; $-di_F/dt = 800\text{ A}/\mu\text{s}$; $V_R = 24\text{ V}$ $T_{VJ} = 125^\circ\text{C}$		tbd		ns
Q_{RM}			tbd		μC
I_{RM}			tbd		A

Component

Symbol	Conditions	Maximum Ratings	
I_{RMS}	per pin in main current paths (P+, N-, L1, L2, L3) may be additionally limited by external connections	300	A
T_J		-55...+175	$^\circ\text{C}$
T_{stg}		-55...+125	$^\circ\text{C}$
V_{ISOL}	$I_{ISOL} \leq 1\text{ mA}$, 50/60 Hz, $f = 1\text{ minute}$	1000	V~
F_c	mounting force with clip	50 - 250	N

Symbol	Conditions	Characteristic Values			
		min.	typ.	max.	
$R_{pin\text{ to chip}}^{1)}$	L+ to L1/L2/L3 or L- to L1/L2/L3		1.0		m Ω
C_p	coupling capacity between shorted pins and mounting tab in the case		160		pF
Weight			25		g

¹⁾ $V_{DS} = I_D \cdot (R_{DS(on)} + R_{Pin\text{ to Chip}})$

Straight Leads GWM 100-085X1-SL

Surface Mount Device GWM 100-085X1-SMD


Leads	Ordering	Part Name & Packing Unit Marking	Part Marking	Delivering Mode	Base Qty.	Ordering Code
Straight	Standard	GWM 100-0085X1 - SL	GWM 100-0085X1	Blister	28	tbd
SMD	Standard	GWM 100-0085X1 - SMD	GWM 100-0085X1	Blister	28	tbd

IXYS reserves the right to change limits, test conditions and dimensions.

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