

6. TYPE DESIGNATION

IGBT MODULES

M	2	TKI		2	- 50	- 12								M2TKI2-50-12
M	6	TKI			- 50	- 12	- 2	H						M6TKI-50-12-2H
M		TKI			- 1200	- 33					T			MTKI-1200-33T
M	2	TKI	E		- 100	- 12								M2TKIE-100-12
M		TKI	D	2	- 50	- 12		H					D	MTKID2-50-12HD
M	2	TKI			- 200	- 17					B			M2TKI-200-17B

M														Module
	No sign													Single switch
	2													2 switches (half-bridge)
	3													3 switches
	4													4 switches (single-phase bridge)
	6													6 switches (three-phase bridge)
	D													Chopper with collector side diode
	P													Press pack IGBT module
		TKI												IGBT
			E											Common emitter circuit
			D											Chopper with emitter side diode
				2,3										Modification number
					50									Collector direct current value, A
						12								Collector-emitter voltage value, V/100
							2,3,...							Design number
								No sign						Standard IGBT module (NPT-technology), for middle commutation frequencies
								K						Trench Gate IGBT module
								H						Low on-state loss IGBT module (FSNPT-technology), for low commutation frequencies
								C						Low on-state and switching loss IGBT module (SPT-technology)
								F						Low switching loss IGBT module (NPT-technology), for high commutation frequencies
									T					Module with high thermal cycling capability, for traction applications
										B				Module with high insulation voltage between base plate and terminals
											D			Module with robust diode in chopper

THYRISTOR, DIODE-THYRISTOR, OPTO-THYRISTOR, TRIAC MODULES

M	1	T	1		- 630 - 28				M1T1-630-28
M		TT		A	- 160 - 32				MTTA-160-16-62
M	4	DT			- 160 - 14 - 7	4			M4DT-160-14-74
M	1	TFI	2		- 500 - 20 - 7	3	2		M1TFI2-500-20-732
M	2	TOTO			- 80 - 12 - 3	3			M2TOTO-80-12-33
M	1	TS			- 400 - 12 - 6				M1TS-400-12-6

M									Module
No sign		TT							Two phase control thyristors
		TD							Phase control thyristor and diode
		DT							Diode and phase control thyristor
		TFTF							Two fast thyristors
		TFDF							Fast thyristor and fast diode
		DFTF							Fast diode and fast thyristor
		TFIDF							Fast switching thyristor and diode
		DFTFI							Diode and fast switching thyristor
1		T							Single phase control thyristor
		TF							Single fast thyristor
		TFI							Single fast switching thyristor
		TS							Single triac
2		T							Two phase control thyristors
		TF							Two fast thyristors
		TFI							Two fast switching thyristors
		TOTO							Two optothyristors
4		T							Four phase control thyristors
		TD							Two phase control thyristors and two diodes
		DT							Two diodes and two phase control thyristors
6		T							Six phase control thyristors
		TD							Three phase control thyristors and three diodes
		DT							Three diodes and three phase control thyristors
		1,2,...						Modification number	
		No sign						Half-bridge	
		A						Common anode circuit	
		C						Common cathode circuit	
			50					Maximal permissible mean on-state current value, A	
				12				Repetitive pulse voltage class, V/100	
					7			Critical rate of rise of off-state voltage, group	
						3		Turn-off time, group	
							2	Turn-on time, group (for fast modules)	

DIODE MODULES

M	1	D	1		- 400	- 40	M1D1-400-40
M	2	D		A	- 160	- 32	M2DA-160-32
M		DD		K	- 160	- 16	MDDK-160-16
M	6	D			- 200	- 12	M6D-200-12
M	1	DF			- 250	- 28	- 4 M1DF-250-28-4
M		DFDF			- 160	- 14	- 1 MDFDF-160-14-1
M	2	DF			- 40	- 16	- 7 M2DF-40-16-7
M	P	D			- 63	X - 16	MPD-63X-16

M										Module
	No sign									Potentialless
	P									Potential (base plate has galvanic connection with one of terminals)
		D								Single diode
	No sign	DD								Two rectifier diodes
		DFDF								Two fast diodes
	1									Single diode
	2									Two diodes
	4									Four diodes (single-phase bridge)
	6									Six diodes (three-phase bridge)
		D								Rectifier diode
		DF								Fast diode
			1,2,...							Modification number
				A						Common anode circuit
				C						Common cathode circuit
					50					Maximal permissible mean on-state current value, A
						X				Reverse polarity sign
							12			Repetitive pulse voltage class, V/100
								3		Reverse recovery time, group (for fast diode modules)

THYRISTORS

T	■	■	■	■	■	■	■	■	■	■		T – thyristor
												Letter designations for thyristor arts:
												L – light triggered thyristor
												F – fast thyristor
												FI – fast switching thyristor
												S – triac
												A – asymmetric thyristor
												I – thyristor for pulse applications
												O – optothyristor
												Design modification number
												Hexagon size designation for stud design thyristors or case diameter designation for press pack thyristors
												Case design designation
												Maximal permissible mean on-state current value, maximal permissible effective current value for triacs, maximal permissible pulse current value for pulse devices, A
												Repetitive voltage class
												(dv _D /dt) _{crit} group
												t _q group
												t _{gr} (for TF and TFI)

DIODES

D						X			
D – diode									
Letter designations for diode arts:									
A – avalanche diode									
F – fast recovery diode									
Design modification number									
Hexagon size designation for stud design diodes or case diameter designation for press pack diodes									
Case design designation									
Maximal permissible mean on-state current value, A									
X – reverse polarity sign									
Repetitive voltage class									
t _{rr} group (for DF)									

DESIGNATION KEY OF HEAT SINKS FOR STUD DESIGN AND PRESS-PACK DEVICES

a) Air cooling

O	3	7	1	-80	-B	2	
							Air cooling heat sink
							Modification index number
							Designation of modification: -for stud design – thread diameter -for press-pack design – contact surface diameter
							Heat sink design index number for devices: 1 – stud design 2 – press-pack design, one side cooling 3 – press-pack design, double side cooling
							Heat sink length
							Climatic conditions
							Placing category

b) Water cooling

OM	101						
							Water cooling copper heat sink
							Design designation

DESIGNATION KEY OF HEAT SINKS FOR POWER MODULES

O	4	6	УХЛ	4		
					O – air cooling	
					OB – water cooling	
					Design designation	
					Modification	
					Climatic conditions	
					Placing category	