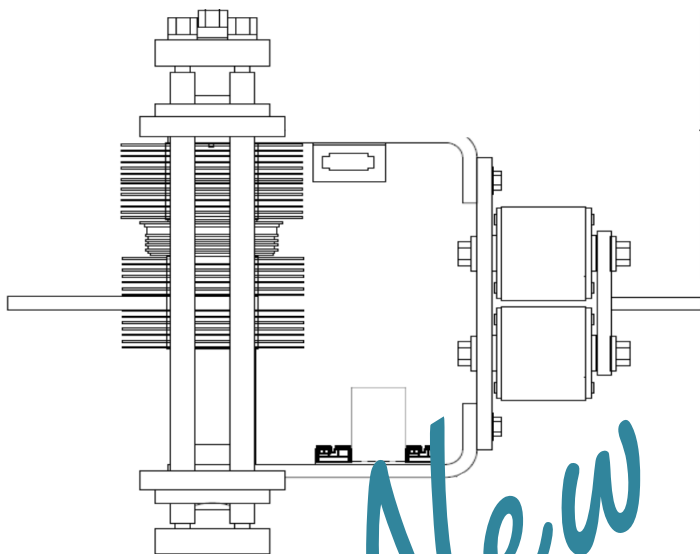


TECS110, _129, _149

SINGLE SCR MODULES

Preliminary Data Sheet

- ▶ Extremely high power density
- ▶ Line voltage range up to 1200 V_{RMS}
- ▶ High reliability
- ▶ Modularity
- ▶ User friendly assembly and maintenance
- ▶ Cost effective solution
- ▶ Suitable for heavy duty applications



New

Maximum Ratings

Parameters	Part number	TECS110	TECS129	TECS149	Conditions	Units
I _{T(AV)}		1100	1290	1490	180° cond, half sine Ta = 40 °C Air velocity = 7.5 m/s	A
I _{T(RMS)}		1727	2025	2339		A
I _{TSM}		27	38	44	50 Hz, T _j = T _{jmax} , V _R = 0 V	kA
I _{TSM}		28.5	40.1	46.4	60 Hz, T _j = T _{jmax} , V _R = 0 V	kA
I ² t		3645	7220	9680	50 Hz, T _j = T _{jmax} , V _R = 0 V	kA ² s
I ² t		3317	6570	8809	60 Hz, T _j = T _{jmax} , V _R = 0 V	kA ² s
V _{DRM} /V _{RRM}		4400	2800	1800	T _j = T _{jmax}	V
T _{jmax}		125	125	125		°C

Part Number	V code	VDRM VRRM max repetitive reverse and off-state blocking voltage [V]	IDRM IRRM @ Tjmax [mA]	VL(RMS) maximum suggested RMS line voltage [V]
TECS149	12	1200	200	400
	16	1600	200	500
	18	1800	200	550
TECS129	22	2200	200	690
	28	2800	200	800
TECS110	34	3400	200	900
	44	4400	200	1200

On-State Characteristics

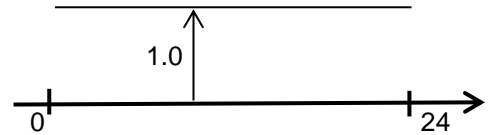
Parameters		TECS110	TECS129	TECS149		Conditions	Units
V _{T(TO)}	Threshold voltage	1.05	0.85	0.85		T _j = T _{jmax}	V
r _T	On-state slope resistance	0.25	0.20	0.12		T _j = T _{jmax}	mΩ
I _H	Holding current, max	300	300	300		T _j = 25°C	mA
I _L	Latching current, typ	1500	1500	1500		T _j = 25°C	mA
P _{MAX}	Max power losses	1930	1930	1930		T _A = 40°C	W

Triggering Characteristics

Parameters		TECS110	TECS129	TECS149		Conditions	Units
V _{GT}	Gate trigger voltage	3	2.5	3		T _j = 25°C, V _D = 5V	V
I _{GT}	Gate trigger current	150	190	300		T _j = 25°C, V _D = 5V	mA
P _{GM}	Peak gate power dissipation	10	10	10		Pulse width 1 ms	W
P _{G(AV)}	Average gate power dissipation	2	2	2			W
I _{FGM}	Peak gate current	3	3	3			A
V _{FGM}	Peak gate voltage (forward)	20	20	20			V
V _{RGM}	Peak gate voltage (reverse)	5	5	5			V

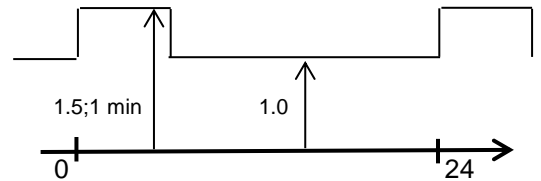
Switching Characteristics

Parameters		TECS110	TECS129	TECS149		Conditions	Units
di/dt	Critical rate of rise of on-state current	200	200	200		T _j = T _{jmax}	A/μs
dV/dt	Critical rate of rise of off-state voltage	1000	1000	1000		T _j = T _{jmax}	V/μs
t _q	Turn-off time, typ	600	400	250		T _j = T _{jmax} , I _T = 1000A di/dt = -20A/μs V _R = 50V dV/dt = 20V/μs	μs



Maximum IEC class 1 currents for typical circuit type

Circuit Type	TECS110	TECS129	TECS149	Conditions	Units
AC switch	2457	2882	3329	Ta = 40 °C Air velocity = 7.5 m/s	A
Center tap	2200	2580	2980		A
Two pulse regen bridge	2200	2580	2980		A
Six pulse regen bridge	3125	3625	4227		A
Double star with I.P. transf.					



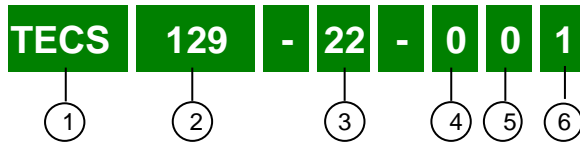
Maximum IEC class 2 currents for typical circuit type

Circuit Type	TECS110	TECS129	TECS149	Conditions	Units
AC switch				TA = 40 °C delay angle = 0°	A
Center tap				TA = 40 °C delay angle = 0°	A
Two pulse bridge					
Six pulse bridge					

Thermal and mechanical characteristics

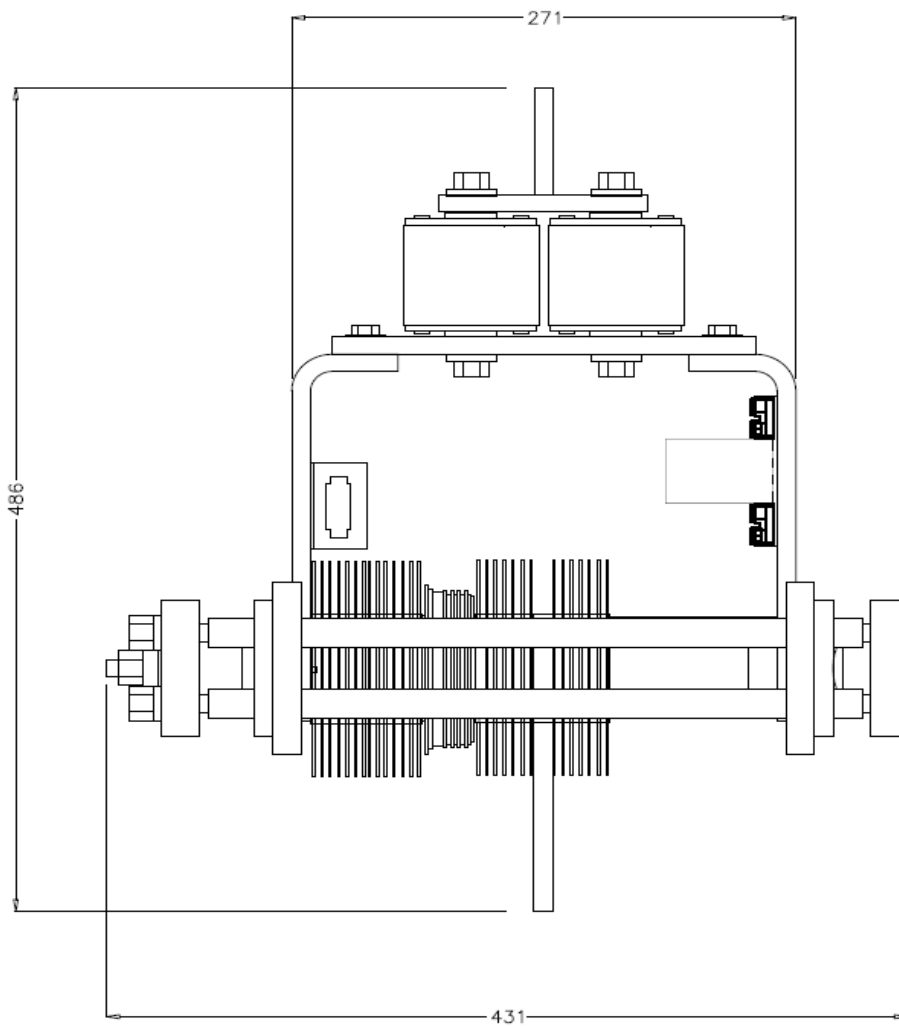
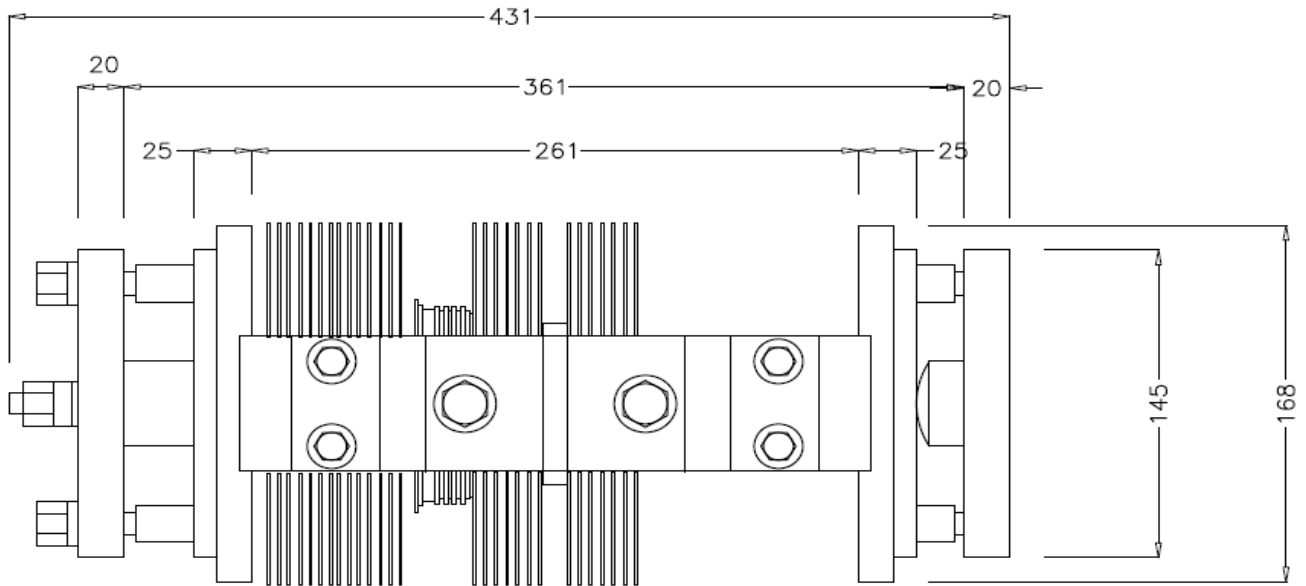
Parameters	TECS110	TECS129	TECS149	Conditions	Units
T _{jmax} Max operating junction temperature	125	125	125		°C
T _{stg} Storage temperature	-40 +70	-40 +70	-40 +70		°C
R _{thJA} Thermal resistance (junction to ambient)	0.044	0.044	0.044	Air velocity = 7.5 m/s	°C/W
F Mounting torque - TEC to panel (+/- 10%) Mounting torque - busbar to TEC (+/- 10%)				M8 mounting screw	N·m
	14	14	14		N·m
Overall dimensions					
D Depth	486				mm
H Height	431				mm
W Width	168				mm
m Mass					kg

PART-NUMBERING SYSTEM



- ① Circuit configuration = Single SCR
- ② Average current / 10
- ③ Blocking voltage / 100
- ④ 0 = No fuse - 1 = with fuse for regen application
- ⑤ 0 = no blown-fuse microswitch
- ⑥ 0 = No snubber - 1 = one RC snubber -
R = one snubber resistor

TECS_ - Main dimensions



dimensions in mm