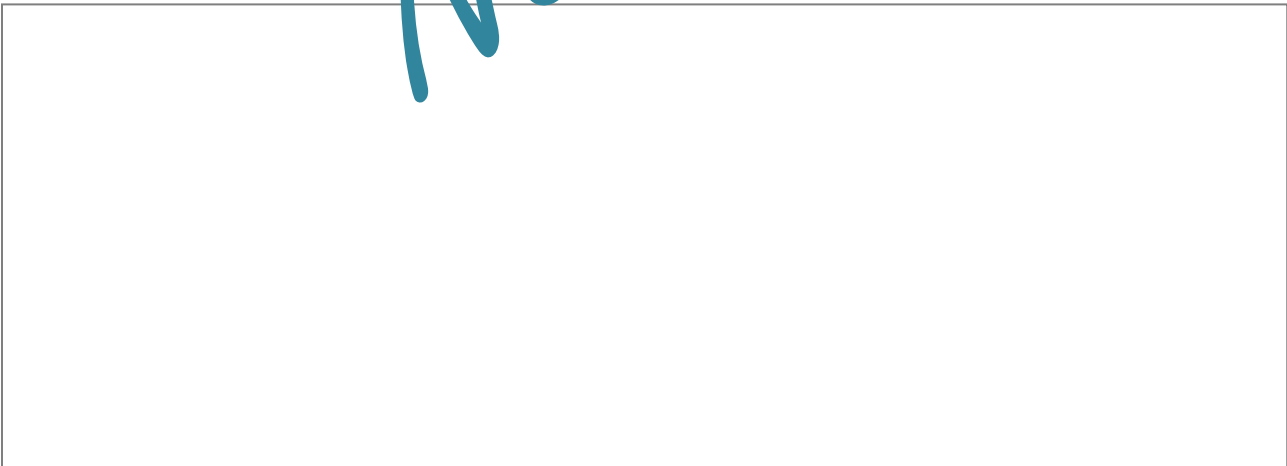


## TECS206,\_212\_256 SINGLE SCR MODULES Preliminary Data Sheet

- ▶ Extremely high power density
- ▶ Line voltage range up to 800 V<sub>RMS</sub>
- ▶ High reliability
- ▶ Modularity
- ▶ User friendly assembly and maintenance
- ▶ Cost effective solution
- ▶ Suitable for heavy duty applications

New



### Maximum Ratings

Parameters	Part number	TECS256	TECS206	TECS212	Conditions	Units
I <sub>T(AV)</sub>		2560	2065	2120	180° cond, half sine T <sub>a</sub> = 40 °C Air velocity = 7.5 m/s	A
I <sub>T(RMS)</sub>		4019	3242	3328		A
I <sub>TSM</sub>		76	60	60	50 Hz, T <sub>j</sub> = T <sub>jmax</sub> , V <sub>R</sub> = 0 V	kA
I <sub>TSM</sub>		80.2	63.3	63.3	60 Hz, T <sub>j</sub> = T <sub>jmax</sub> , V <sub>R</sub> = 0 V	kA
I <sup>2</sup> t		28880	18000	18000	50 Hz, T <sub>j</sub> = T <sub>jmax</sub> , V <sub>R</sub> = 0 V	kA <sup>2</sup> s
I <sup>2</sup> t		26281	16380	16380	60 Hz, T <sub>j</sub> = T <sub>jmax</sub> , V <sub>R</sub> = 0 V	kA <sup>2</sup> s
V <sub>DRM</sub> /V <sub>RRM</sub>		2800	2800	2200	T <sub>j</sub> = T <sub>jmax</sub>	V
T <sub>jmax</sub>		125	125	125		°C

Part Number	V code	VDRM VRRM max repetitive reverse and off-state blocking voltage	IDRM IRRM @ Tjmax	VL(RMS) maximum suggested RMS line voltage
		[V]	[mA]	[V]
TECS212	16	1600	200	500
	18	1800	200	550
	22	2200	200	690
TECS206	22	2200	200	690
	28	2800	200	800
TECS256	22	2200	200	690
	28	2800	200	800

**On-State Characteristics**

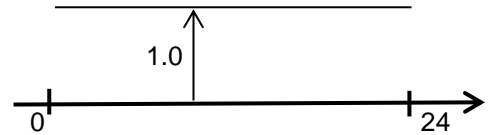
Parameters		TECS256	TECS206	TECS212		Conditions	Units
V <sub>T(TO)</sub>	Threshold voltage	1.05	0.85	0.85		T <sub>j</sub> = T <sub>jmax</sub>	V
r <sub>T</sub>	On-state slope resistance	0.25	0.20	0.12		T <sub>j</sub> = T <sub>jmax</sub>	mΩ
I <sub>H</sub>	Holding current, max	300	300	300		T <sub>j</sub> = 25°C	mA
I <sub>L</sub>	Latching current, typ	1500	1500	1500		T <sub>j</sub> = 25°C	mA
P <sub>MAX</sub>	Max power losses	3320	3080	2870		T <sub>A</sub> = 40°C	W

**Triggering Characteristics**

Parameters		TECS256	TECS206	TECS212		Conditions	Units
V <sub>GT</sub>	Gate trigger voltage	3	3	3.5		T <sub>j</sub> = 25°C, V <sub>D</sub> = 5V	V
I <sub>GT</sub>	Gate trigger current	300	300	350		T <sub>j</sub> = 25°C, V <sub>D</sub> = 5V	mA
P <sub>GM</sub>	Peak gate power dissipation	150	150	150		Pulse width 1 ms	W
P <sub>G(AV)</sub>	Average gate power dissipation	5	5	2			W
I <sub>FGM</sub>	Peak gate current	12	12	10			A
V <sub>FGM</sub>	Peak gate voltage (forward)	30	30	30			V
V <sub>RGM</sub>	Peak gate voltage (reverse)	5	5	5			V

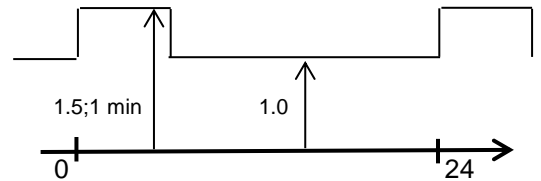
**Switching Characteristics**

Parameters		TECS256	TECS206	TECS212		Conditions	Units
di/dt	Critical rate of rise of on-state current	250	200	200		T <sub>j</sub> = T <sub>jmax</sub>	A/μs
dV/dt	Critical rate of rise of off-state voltage	1000	1000	1000		T <sub>j</sub> = T <sub>jmax</sub>	V/μs
t <sub>q</sub>	Turn-off time, typ	500	500	500		T <sub>j</sub> = T <sub>jmax</sub> , I <sub>T</sub> = 1000A di/dt = -20A/μs V <sub>R</sub> = 50V dV/dt = 20V/μs	μs



**Maximum IEC class 1 currents for typical circuit type**

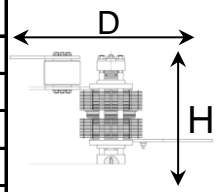
Circuit Type	TECS256	TECS206	TECS212	Conditions	Units
AC switch	5725	4615	4745	Ta = 40 °C Air velocity = 7.5 m/s	A
Center tap	5120	4130	4240		A
Two pulse regen bridge	5125	4130	4248		A
Six pulse regen bridge	7265	5820	6023		A
Double star with I.P. transf.					



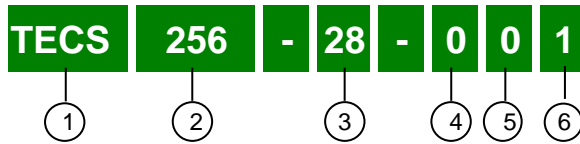
**Maximum IEC class 2 currents for typical circuit type**

Circuit Type	TECS256	TECS206	TECS212	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**

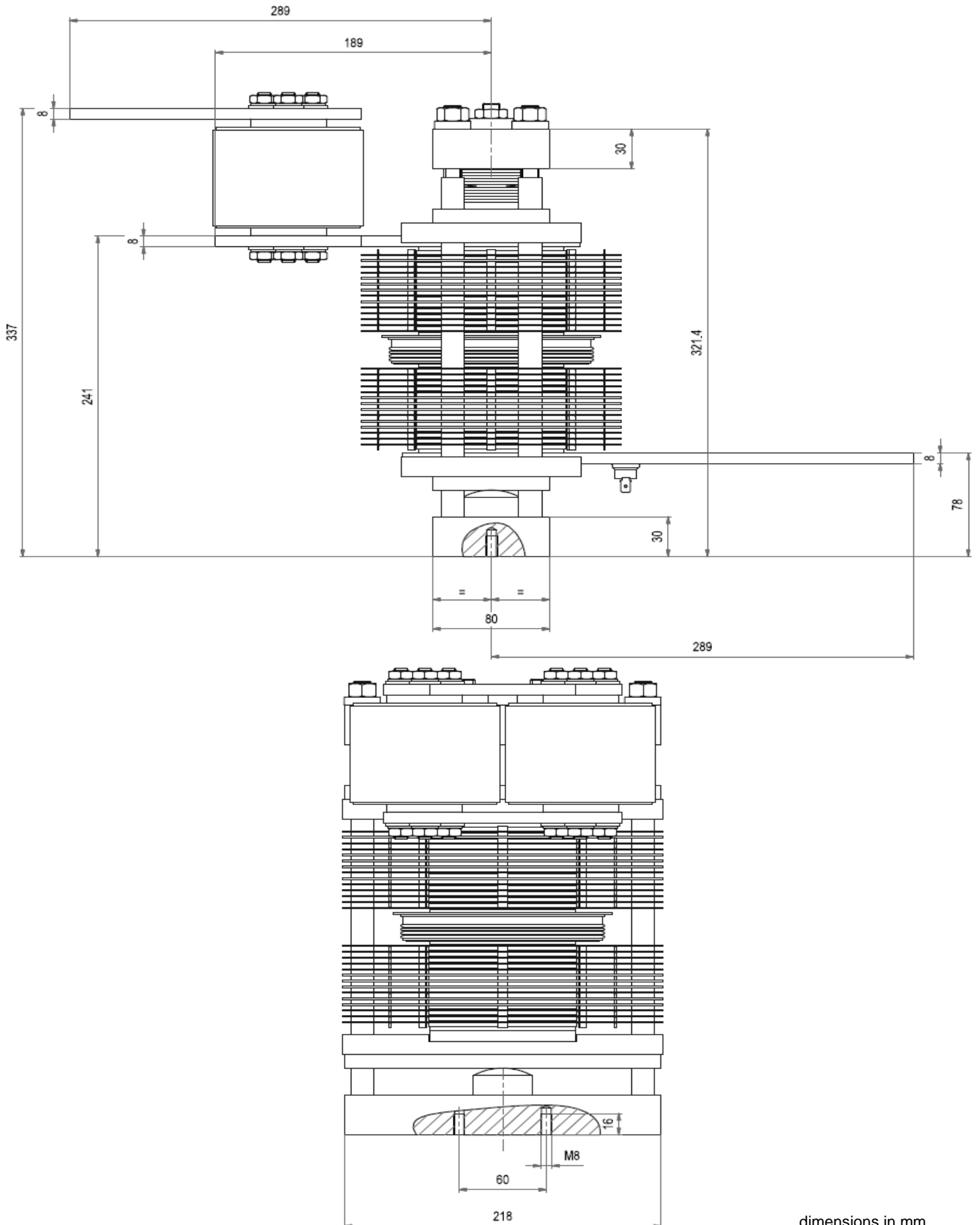
Parameters	TECS256	TECS206	TECS212	Conditions	Units
T <sub>jmax</sub> Max operating junction temperature	125	125	125		°C
T <sub>stg</sub> Storage temperature	-40 +70	-40 +70	-40 +70		°C
R <sub>thJA</sub> Thermal resistance (junction to ambient)	0.026	0.028	0.030	Air velocity = 7.5 m/s	°C/W
F Mounting torque - TEC to panel (+/- 10%) Mounting torque - busbar to TEC (+/- 10%)				M8 mounting screw	N·m
	14	14	14		N·m
<b>Overall dimensions</b>					
D Depth	578	578	578		mm
H Height	331	321	321		mm
W Width	220	220	220		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