

# CAPITÓLIO

## MODULE TYPE

## CSST312

VOLTAGE RATINGS MAXIMUM	LIMITS UNITS
V <sub>DRM</sub> Repetitive peak off-state voltage, (note 1)	1600-2200 V
V <sub>DSM</sub> Non-repetitive peak off-state voltage, (note 1)	1600-2200 V
V <sub>RPM</sub> Repetitive peak reverse voltage, (note 1)	1600-2200 V
V <sub>RSM</sub> Non-repetitive peak reverse voltage	1700-2300V

### OTHER RATINGS MAXIMUM

### LIMITS UNITS

I <sub>T(AV)M</sub> Maximum average on-state current, T <sub>case</sub> =89°C	320A
I <sub>T(AV)M</sub> Maximum average on-state current. T <sub>case</sub> =85°C,	320A
I <sub>T(AV)M</sub> Maximum average on-state current. T <sub>case</sub> =100°C,	376A
I <sub>T(RMS)M</sub> Nominal RMS on-state current, T <sub>case</sub> =55°C	520A
I <sub>T(d.c.)</sub> D.C. on-state current, T <sub>case</sub> =55°C	520A
I <sub>TSM</sub> Peak non-repetitive surge tp=10ms, V <sub>rm</sub> =0.6VRRM	9.2kA
I <sub>TSM2</sub> Peak non-repetitive surge tp=10ms, V <sub>rm</sub> ≤10V,	10.2kA
I <sub>2t</sub> capacity for fusing tp=10ms, V <sub>rm</sub> =0.6VRRM	423000 A <sup>2</sup> s
I <sub>2t</sub> capacity for fusing tp=10ms, V <sub>rm</sub> ≤10V	423000 A <sup>2</sup> s
(di/dt) <sub>cr</sub> Critical rate of rise of on-state current (repetitive)	100A/μs
(di/dt) <sub>cr</sub> Critical rate of rise of on-state current (non-repetitive)	500A/μs
V <sub>RGM</sub> Peak reverse gate voltage	10V
P <sub>G(AV)</sub> Mean forward gate power	20W
P <sub>GM</sub> Peak forward gate power	120W
V <sub>isol</sub> Isolation Voltage	4800/4000V
T <sub>j op</sub> Operating temperature range	40 to +140 °C
T <sub>stg</sub> Storage temperature range	40 to +125 °C

	PARAMETER	MIN.	TYP	MAX	TEST Conditions	Unit
V <sub>TM</sub>	Maximum peak on-state voltage	-	-	1.32	I <sub>TM</sub> =960A	V
V <sub>TM</sub>	Maximum peak on-state voltage	-	-	1.32	I <sub>TM</sub> =960A	V
V <sub>T0</sub>	Threshold voltage	-	-	0.8		V
r <sub>T</sub>	Slope resistance	-	-	0.68		mΩ
(dv/dt) <sub>cr</sub>	Critical rate of rise of off-state voltage	1000	-	-	V <sub>D</sub> =80% V <sub>DRM</sub> , linear ramp, Gate o/c	V/μs
I <sub>DRM</sub>	Peak off-state current	-	-	40	Rated V <sub>DRM</sub>	mA
I <sub>RPM</sub>	Peak reverse current	-	-	40	Rated V <sub>RPM</sub>	mA
V <sub>GT</sub>	Gate trigger voltage	-	-	2.0	T <sub>j</sub> =25°C, V <sub>D</sub> =10V, I <sub>T</sub> =3A	V
I <sub>GT</sub>	Gate trigger current	-	-	220	T <sub>j</sub> =25°C, V <sub>D</sub> =10V, I <sub>T</sub> =3A	mA
I <sub>H</sub>	Holding current	-	-	150	T <sub>j</sub> =25°C	mA

$t_{gd}$	Gate controlled turn-on delay time	-	0.6	2	$I_{FG}=1A$ , $t_r=0.5\mu s$ , $V_D=67\%V_{DRM}$ , $I_{TM}=300A$ , $di/dt=1A/\mu s$ , $T_j=25^\circ C$ $\mu s$	$\mu s$
$I_{rm}$	Reverse recovery current	-	275	-	$I_{TM}=300A$ , $t_p=200\mu s$ , $di/dt=10A/\mu s$ , $V_r=50V$	A
$t_q$	Turn-off time	-	300	-	$I_{TM}=300A$ , $t_p=200\mu s$ , $di/dt=10A/\mu s$ , $V_r=50V$ , $V_{dr}=80\%V_{DRM}$ , $dV_{dr}/dt=20V/\mu s$	$\mu s$
$R_{thJC}$	Thermal resistance, junction to case	-	-	0.06	Whole Module	K/W
$R_{thCK}$	Thermal resistance, case to heatsink	-	-	0.08	Whole Module	K/W
$F_1$	Mounting force (to heatsink)	4.25	-	5.75		Nm
$F_2$	Mounting force (to terminals)	14.45	-	19.5 5		Nm
$W_t$	Weight	-	750	-		g

Voltage Grade	$V_{DRM}$ V	$V_{DSM}$ V	$V_{RRM}$ V	$V_{RSM}$ V	$V_D$ DC V	$V_R$ DC V
16	1600			1700	820	
18	1800			1900	1150	
22	2200			2300	1393	

## Dimensions in mm (1 mm = 0.0394")

