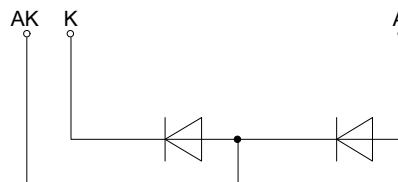
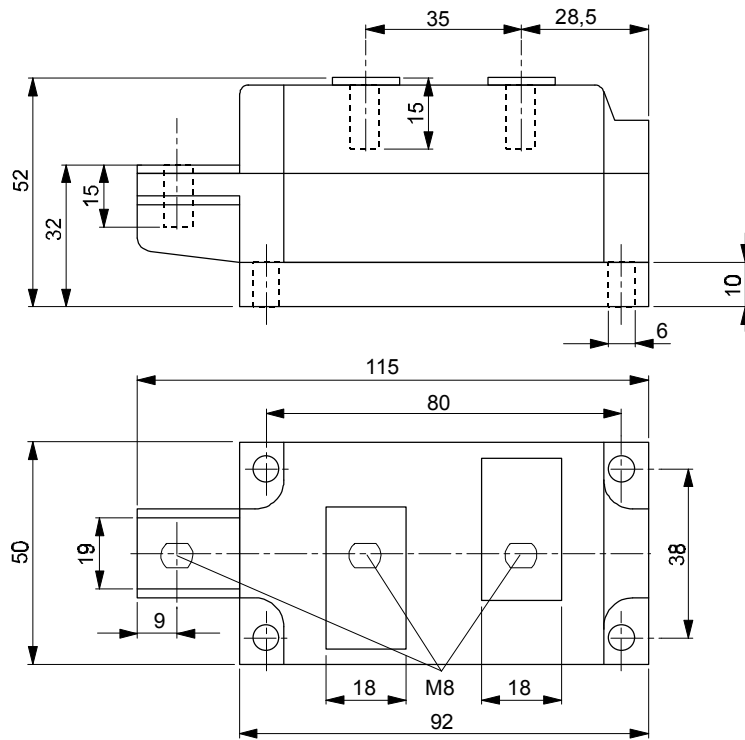




European Power-Semiconductor and Electronics Company GmbH + Co. KG

Marketing Information

DD 241 S



Elektrische Eigenschaften Höchstzulässige Werte	Electrical properties Maximum rated values				
Periodische Spitzensperrspannung	repetitive peak reverse voltage	$t_{vj} = -40^{\circ}\text{C} \dots t_{vj \max}$	V_{RRM} DD 241 S:	1000 1200 1400	V
Stoßspitzenspannung	non-repetitive peak reverse voltage	$t_{vj} = +25^{\circ}\text{C} \dots t_{vj \max}$	$V_{RSM} = V_{RRM}$	+ 50	V
Durchlaßstrom-Grenzeffektivwert	RMS forward current		I_{FRMSM}	410	A
Dauergrenzstrom	average forward current	$t_c = 100^{\circ}\text{C}$	I_{FAVM}	240	A
		$t_c = 94^{\circ}\text{C}$		261	A
Stoßstrom-Grenzwert	surge current	$t_{vj} \leq 25^{\circ}\text{C}, t_p = 10 \text{ ms}$	I_{FSM}	9300	A
		$t_{vj} = t_{vj \max}, t_p = 10 \text{ ms}$		7500	A
Grenzlastintegral	$\int i^2 t$ -value	$t_{vj} \leq 25^{\circ}\text{C}, t_p = 10 \text{ ms}$	$\int i^2 t$	432000	A^2s
		$t_{vj} = t_{vj \max}, t_p = 10 \text{ ms}$		281000	A^2s
Charakteristische Werte	Characteristic values				
Durchlaßspannung	forward voltage	$t_{vj} = t_{vj \max}, i_F = 800 \text{ A}$	V_F	max. 1,55	V
Schleusenspannung	threshold voltage		$V_{(TO)}$	1,1	V
Ersatzwiderstand	slope resistance		r_T	0,5	$\text{m}\Omega$
Sperrstrom	reverse current	$t_{vj} = t_{vj \max}, V_R = V_{RRM}$	i_R	max. 200	mA
Rückstromspitze	peak reverse recovery current	$t_{vj} = t_{vj \max}, i_{FM} = 250 \text{ A},$ $-di_F/dt = 100 \text{ A}/\mu\text{s}$	I_{RM}	max. 135	A
Sperrverzugsladung	recovered charge	$t_{vj} = t_{vj \max}, i_{FM} = 250 \text{ A}$ $-di_F/dt = 100 \text{ A}/\mu\text{s}$	Q_r	max. 250	μAs
Isolations-Prüfspannung	insulation test voltage	RMS, $f = 50 \text{ Hz}, t = 1 \text{ min.}$	V_{ISOL}	3	kV
Thermische Eigenschaften	Thermal properties				
Innerer Wärmewiderstand	thermal resistance, junction to case	$\Theta = 180^{\circ}\text{el. sin: pro Modul/per module}$ pro Zweig/per arm DC: pro Modul/per module pro Zweig/per arm	R_{thJC}	max. 0,075 max. 0,15 max. 0,072 max. 0,144	$^{\circ}\text{C}/\text{W}$
Übergangs-Wärmewiderstand	thermal resistance, case to heatsink	pro Modul/per module pro Zweig/per arm	R_{thCK}	max. 0,02 max. 0,04	$^{\circ}\text{C}/\text{W}$
Höchstzul.Sperrschichttemperatur	max. junction temperature		$t_{vj \max}$	150	$^{\circ}\text{C}$
Betriebstemperatur	operating temperature		$t_{c \text{ op}}$	-40...+150	$^{\circ}\text{C}$
Lagertemperatur	storage temperature		t_{stg}	-40...+150	$^{\circ}\text{C}$
Mechanische Eigenschaften	Mechanical properties				
Si-Elemente mit Druckkontakt	Si-pellets with pressure contact				
Innere Isolation	internal insulation			AIN	
Anzugsdrehmomente	tightening torques				
mechanische Befestigung	mounting torque	Toleranz/tolerance +/- 15%	M1	6	Nm
elektrische Anschlüsse	terminal connection torque	Toleranz/tolerance +5%/-10%	M2	12	Nm
Gewicht	weight		G	typ. 800	g
Kriechstrecke	creepage distance			17	mm
Schwingfestigkeit	vibration resistance	$f = 50 \text{ Hz}$		5 · 9,81	m/s^2
Maßbild	outline				8

DD 241 S kann auch mit gemeinsamer Anode oder gemeinsamer Kathode geliefert werden.

DD 241 S can also be supplied with common anode or common cathode.

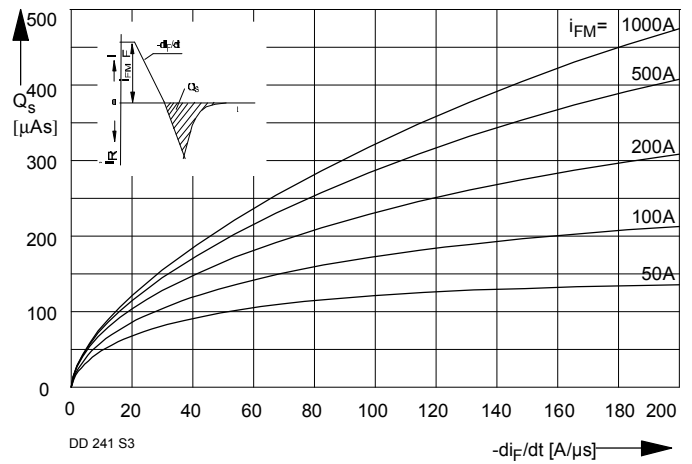


Bild / Fig. 2
 Typische Abhängigkeit der oberen Sperrverzögerungsladung Q_s von der abkommütierenden Stromsteilheit $-di_F/dt$ bei $t_{vj \max}$.
 Typical relationship between the maximum recovered charge Q_s and the rate of decay of forward current $-di_F/dt$ at $t_{vj \max}$

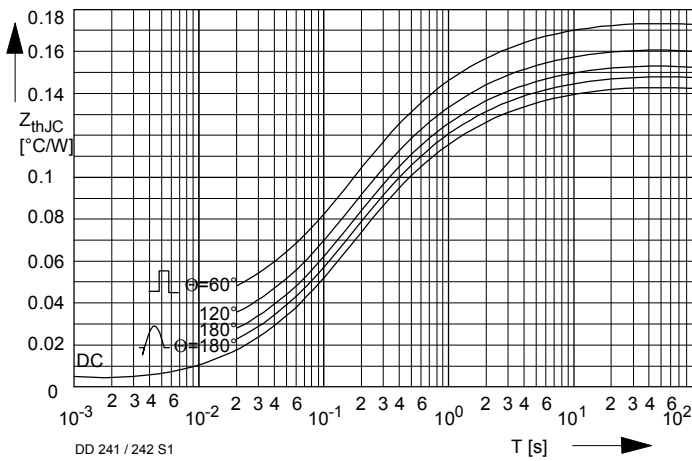


Bild / Fig. 3
 Transienter innerer Wärmewiderstand $Z_{(th)JC}$ je Zweig bei sinus- und trapezförmigem Stromverlauf.
 Transient thermal impedance $Z_{(th)JC}$, junction to case per arm at sinusoidal and trapezoidal current waveform.

Analytische Elemente des transienten Wärmewiderstandes Z_{thJC} pro Zweig für DC
 Analytical elements of transient thermal impedance Z_{thJC} per arm for DC

Pos. n	1	2	3	4	5	6	7
R_{thn} [°C/W]	0,0031	0,0097	0,0257	0,0529	0,0526		
τ_n [s]	0,0009	0,008	0,11	0,61	3,06		

Analytische Funktion / Analytical function:

$$Z_{thJC} = \sum_{n=1}^{n_{max}} R_{thn} (1 - e^{-\frac{t}{\tau_n}})$$

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