

Diode, Wechselrichter / Diode, Inverter

Höchstzulässige Werte / Maximum Rated Values

Periodische Spitzensperrspannung Repetitive peak reverse voltage	$T_{vj} = -40^{\circ}\text{C}$ $T_{vj} = 150^{\circ}\text{C}$	V_{RRM}	3300 3300	V
Dauergleichstrom Continuous DC forward current		I_F	1000	A
Periodischer Spitzenstrom Repetitive peak forward current	$t_P = 1 \text{ ms}$	I_{FRM}	2000	A
Grenzlastintegral I^2t - value	$V_R = 0 \text{ V}, t_P = 10 \text{ ms}, T_{vj} = 125^{\circ}\text{C}$ $V_R = 0 \text{ V}, t_P = 10 \text{ ms}, T_{vj} = 150^{\circ}\text{C}$	I^2t	375 325	kA ² s kA ² s
Spitzenverlustleistung Maximum power dissipation	$T_{vj} = 150^{\circ}\text{C}$	P_{RQM}	1600	kW
Mindesteinschaltdauer Minimum turn-on time		$t_{on \text{ min}}$	10,0	μs

Charakteristische Werte / Characteristic Values

		min. typ. max.				
Durchlassspannung Forward voltage	$I_F = 1000 \text{ A}, V_{GE} = 0 \text{ V}$ $I_F = 1000 \text{ A}, V_{GE} = 0 \text{ V}$ $I_F = 1000 \text{ A}, V_{GE} = 0 \text{ V}$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 150^{\circ}\text{C}$	V_F	2,25 2,20 2,20	2,85 2,75 V	V V V
Rückstromspitze Peak reverse recovery current	$I_F = 1000 \text{ A}, -di_F/dt = 3000 \text{ A}/\mu\text{s} (T_{vj}=150^{\circ}\text{C})$ $V_R = 1800 \text{ V}$ $V_{GE} = -15 \text{ V}$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 150^{\circ}\text{C}$	I_{RM}	1100 1200 1250		A A A
Sperrverzögerungsladung Recovered charge	$I_F = 1000 \text{ A}, -di_F/dt = 3000 \text{ A}/\mu\text{s} (T_{vj}=150^{\circ}\text{C})$ $V_R = 1800 \text{ V}$ $V_{GE} = -15 \text{ V}$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 150^{\circ}\text{C}$	Q_r	1000 1750 1950		μC μC μC
Abschaltenergie pro Puls Reverse recovery energy	$I_F = 1000 \text{ A}, -di_F/dt = 3000 \text{ A}/\mu\text{s} (T_{vj}=150^{\circ}\text{C})$ $V_R = 1800 \text{ V}$ $V_{GE} = -15 \text{ V}$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 150^{\circ}\text{C}$	E_{rec}	1100 2100 2500		mJ mJ mJ
Wärmewiderstand, Chip bis Gehäuse Thermal resistance, junction to case	pro Diode / per diode		R_{thJC}		20,0	K/kW
Wärmewiderstand, Gehäuse bis Kühlkörper Thermal resistance, case to heatsink	pro Diode / per diode $\lambda_{\text{Paste}} = 1 \text{ W}/(\text{m}\cdot\text{K})$ / $\lambda_{\text{grease}} = 1 \text{ W}/(\text{m}\cdot\text{K})$		R_{thCH}		16,5	K/kW
Temperatur im Schaltbetrieb Temperature under switching conditions			$T_{vj \text{ op}}$	-40	150	$^{\circ}\text{C}$

Diode, Brems-Chopper / Diode, Brake-Chopper Höchstzulässige Werte / Maximum Rated Values

Periodische Spitzensperrensorgung Repetitive peak reverse voltage	$T_{vj} = -40^{\circ}\text{C}$ $T_{vj} = 150^{\circ}\text{C}$	V_{RRM}	3300 3300	V
Dauergleichstrom Continuous DC forward current		I_F	1000	A
Periodischer Spitzenstrom Repetitive peak forward current	$t_P = 1\text{ ms}$	I_{FRM}	2000	A
Grenzlastintegral I^2t - value	$V_R = 0\text{ V}, t_P = 10\text{ ms}, T_{vj} = 125^{\circ}\text{C}$ $V_R = 0\text{ V}, t_P = 10\text{ ms}, T_{vj} = 150^{\circ}\text{C}$	I^2t	375 325	kA^2s kA^2s
Spitzenverlustleistung Maximum power dissipation	$T_{vj} = 150^{\circ}\text{C}$	P_{RQM}	1600	kW
Mindesteinschaltzeit Minimum turn-on time		$t_{on\ min}$	10,0	μs

Charakteristische Werte / Characteristic Values

		min.	typ.	max.	
Durchlassspannung Forward voltage	$I_F = 1000\text{ A}, V_{GE} = 0\text{ V}$		2,25	2,85	V
	$I_F = 1000\text{ A}, V_{GE} = 0\text{ V}$		2,20	2,75	V
	$I_F = 1000\text{ A}, V_{GE} = 0\text{ V}$		2,20		V
Rückstromspitze Peak reverse recovery current	$I_F = 1000\text{ A}, -di_F/dt = 3000\text{ A}/\mu\text{s} (T_{vj}=150^{\circ}\text{C})$		1100		A
	$V_R = 1800\text{ V}$		1200		A
	$V_{GE} = -15\text{ V}$		1250		A
Sperrverzögerungsladung Recovered charge	$I_F = 1000\text{ A}, -di_F/dt = 3000\text{ A}/\mu\text{s} (T_{vj}=150^{\circ}\text{C})$		1000		μC
	$V_R = 1800\text{ V}$		1750		μC
	$V_{GE} = -15\text{ V}$		1950		μC
Abschaltenergie pro Puls Reverse recovery energy	$I_F = 1000\text{ A}, -di_F/dt = 3000\text{ A}/\mu\text{s} (T_{vj}=150^{\circ}\text{C})$		1100		mJ
	$V_R = 1800\text{ V}$		2100		mJ
	$V_{GE} = -15\text{ V}$		2500		mJ
Wärmewiderstand, Chip bis Gehäuse Thermal resistance, junction to case	pro Diode / per diode	R_{thJC}		21,5	K/kW
Wärmewiderstand, Gehäuse bis Kühlkörper Thermal resistance, case to heatsink	pro Diode / per diode $\lambda_{\text{Paste}} = 1\text{ W}/(\text{m}\cdot\text{K})$ / $\lambda_{\text{grease}} = 1\text{ W}/(\text{m}\cdot\text{K})$	R_{thCH}		16,5	K/kW
Temperatur im Schaltbetrieb Temperature under switching conditions		$T_{vj\ op}$	-40	150	$^{\circ}\text{C}$