

### Elektrische Eigenschaften / Electrical properties

#### Höchstzulässige Werte / Maximum rated values

Periodische Spitzensperrspannung repetitive peak reverse voltage	$t_{vj} = -40^{\circ}\text{C} \dots t_{vj \text{ max}}$ $f = 50\text{Hz}$	$V_{RRM}$	5800 6000 6500	V V V
Durchlaßstrom-Grenzeffektivwert RMS forward current		$I_{FRMSM}$	3400	A
Dauergrenzstrom mean forward current	$t_C = 100^{\circ}\text{C}, f = 50\text{Hz}$ $t_C = 60^{\circ}\text{C}, f = 50\text{Hz}$	$I_{FAVM}$	1600 2160	A A
Stoßstrom-Grenzwert surge forward current	$t_{vj} = 25^{\circ}\text{C}, t_p = 10\text{ms}$ $t_{vj} = t_{vj \text{ max}}, t_p = 10\text{ms}$	$I_{FSM}$	23 20	kA kA
Grenzlastintegral $I^2t$ -value	$t_{vj} = 25^{\circ}\text{C}, t_p = 10\text{ms}$ $t_{vj} = t_{vj \text{ max}}, t_p = 10\text{ms}$	$I^2t$	$2,65 \cdot 10^6$ $2 \cdot 10^6$	$\text{A}^2\text{s}$ $\text{A}^2\text{s}$

#### Charakteristische Werte / Characteristic values

Durchlaßspannung forward voltage	$t_{vj} = t_{vj \text{ max}}, i_F = 2500\text{A}$	$V_F$	max. 1,9	V
Schleusenspannung threshold voltage	$t_{vj} = t_{vj \text{ max}}$ $i_F = 2500\text{A}$	$V_{(TO)}$	0,88	V
Ersatzwiderstand forward slope resistance	$t_{vj} = t_{vj \text{ max}}$	$r_T$	0,41	mΩ
Durchlaßrechenkennlinie On-state characteristics for calculation $V_F = A + B \cdot i_F + C \cdot \ln(i_F + 1) + D \cdot \sqrt{i_F}$	$t_{vj} = t_{vj \text{ max}}$	A B C D	max. 0,579 0,000203 -0,00540 0,0173	
Sperrstrom reverse current	$t_{vj} = t_{vj \text{ max}}, V_R = V_{RRM}$	$i_R$	50	mA
Sperrverzögerungsladung recovered charge	$t_{vj} = t_{vj \text{ max}}$ $I_{TM} = 1000\text{A}, di/dt = 10\text{A}/\mu\text{s}$ $V_R = 1000\text{V}, C = 0,5\mu\text{F}, R = 39 \Omega$	$Q_R$	11	mAs
Rückstromspitze peak reverse recovery current	$t_{vj} = t_{vj \text{ max}}$ $I_{TM} = 1000\text{A}, di/dt = 10\text{A}/\mu\text{s}$ $V_R = 1000\text{V}, C = 0,5\mu\text{F}, R = 39 \Omega$	$I_{RM}$	300	A

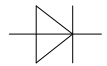
# Technische Information / Technical Information

**eupec**

Netz Gleichrichterdiode  
Rectifier Diode

**D 1481 N 58 ... 65 T**

**N**



**Vorläufige Daten**  
**Preliminary Data**

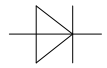
## Thermische Eigenschaften / Thermal properties

Innerer Wärmewiderstand thermal resistance, junction to case	beidseitig / two-sided, DC Anode / anode, DC Kathode / cathode, DC	$R_{thJC}$	max 0,014 max 0,026 max 0,03	°C/W °C/W °C/W
Übergangs-Wärmewiderstand thermal resistance, case to heatsink	Kühlfläche / cooling surface beidseitig / two-sided einseitig / single sided	$R_{thCK}$	max 0,005 max 0,010	°C/W °C/W
Höchstzulässige Sperrschichttemperatur max. junction temperature		$t_{vj \max}$	160	°C
Betriebstemperatur operating temperature		$t_{c \text{ op}}$	-40...+160	°C
Lagertemperatur storage temperature		$t_{stg}$	-40...+160	°C

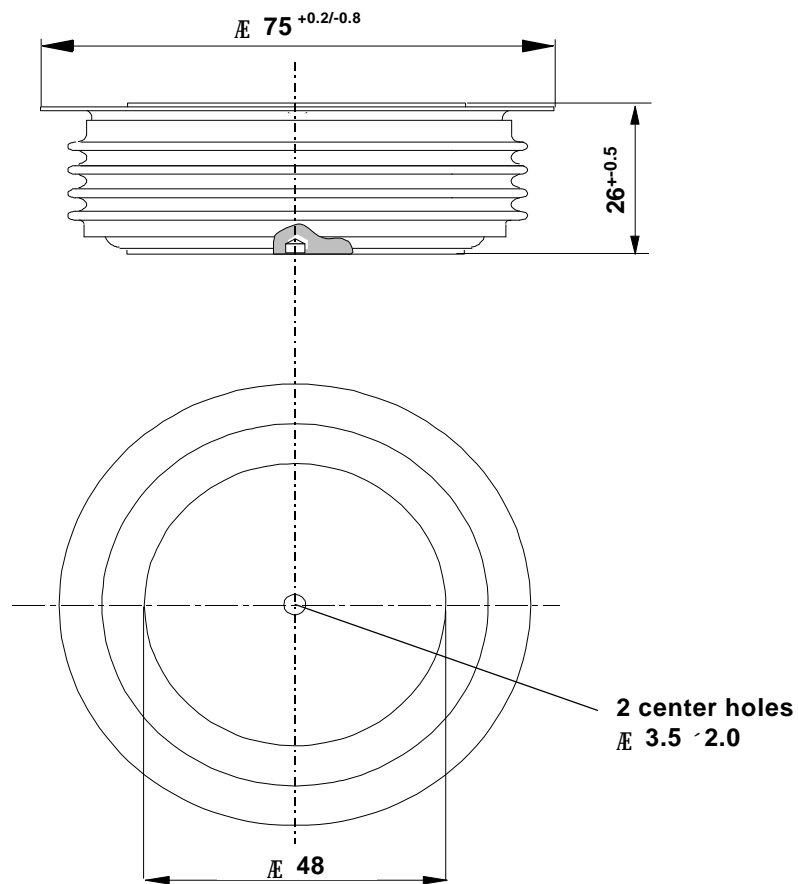
## Mechanische Eigenschaften / Mechanical properties

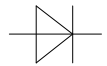
Gehäuse, siehe Anlage case, see appendix			Seite 3	
Si - Element mit Druckkontakt Si - pellet with pressure contact			55DN65	
Anpreßkraft clamping force		F	15...36	kN
Gewicht weight		G	typ 600	g
Kriechstrecke creepage distance			30	mm
Luftstrecke air distance			20	mm
Feuchtekategorie humidity classification	DIN 40040		C	
Schwingfestigkeit vibration resistance	f = 50Hz		50	m/s <sup>2</sup>

Mit dieser technischen Information werden Halbleiterbauelemente spezifiziert, jedoch keine Eigenschaften zugesichert. Sie gilt in Verbindung mit den zugehörigen technischen Erläuterungen.  
This technical information specifies semiconductor devices but promises no characteristics. It is valid in combination with the belonging technical notes.



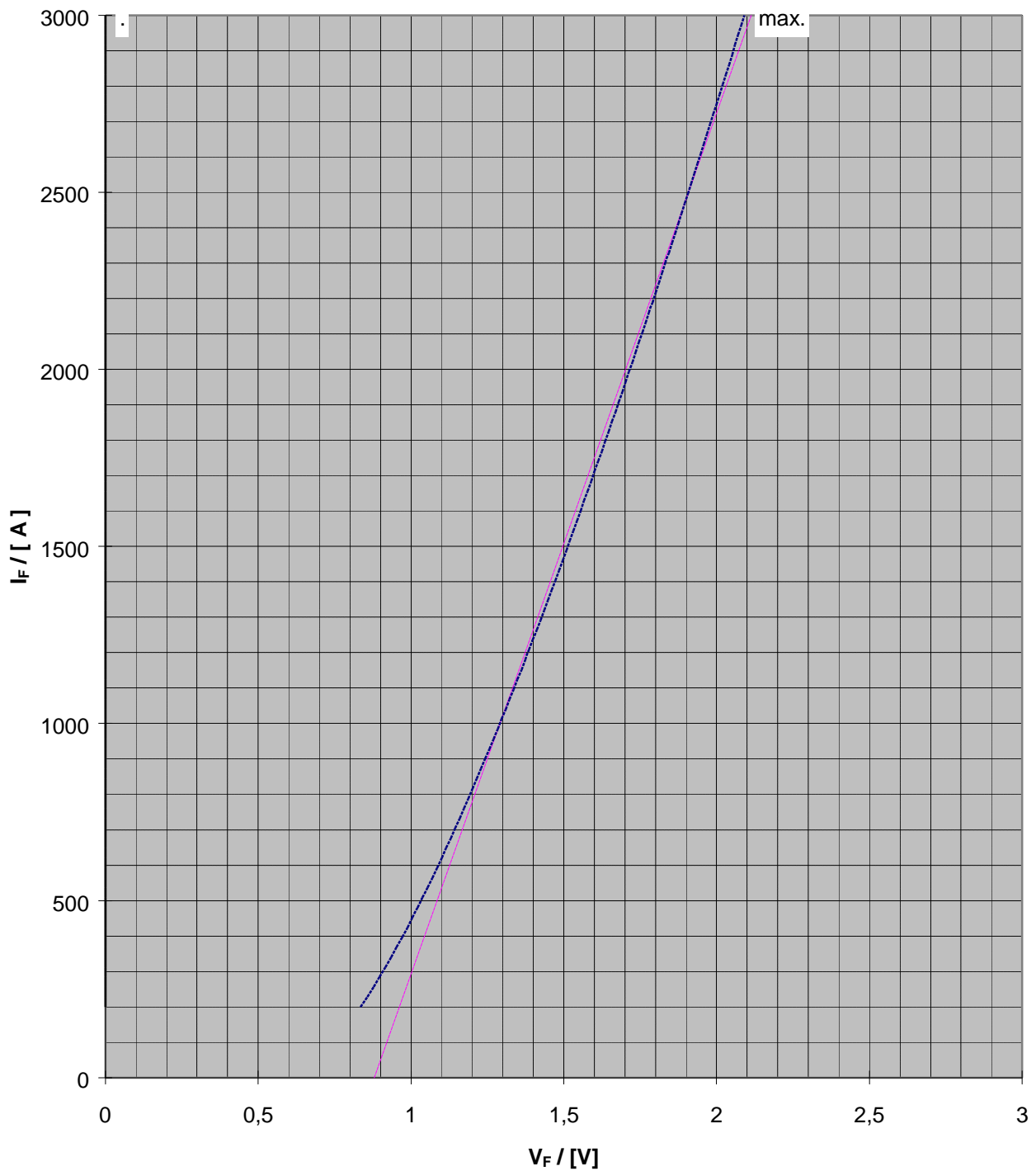
Maßbild / Outline

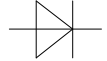




**On-State Characteristics (  $v_F$  )**  
typical and upper limit of scatter range

$\frac{3}{4}$   $t_{vj} = 160^\circ \text{C}$

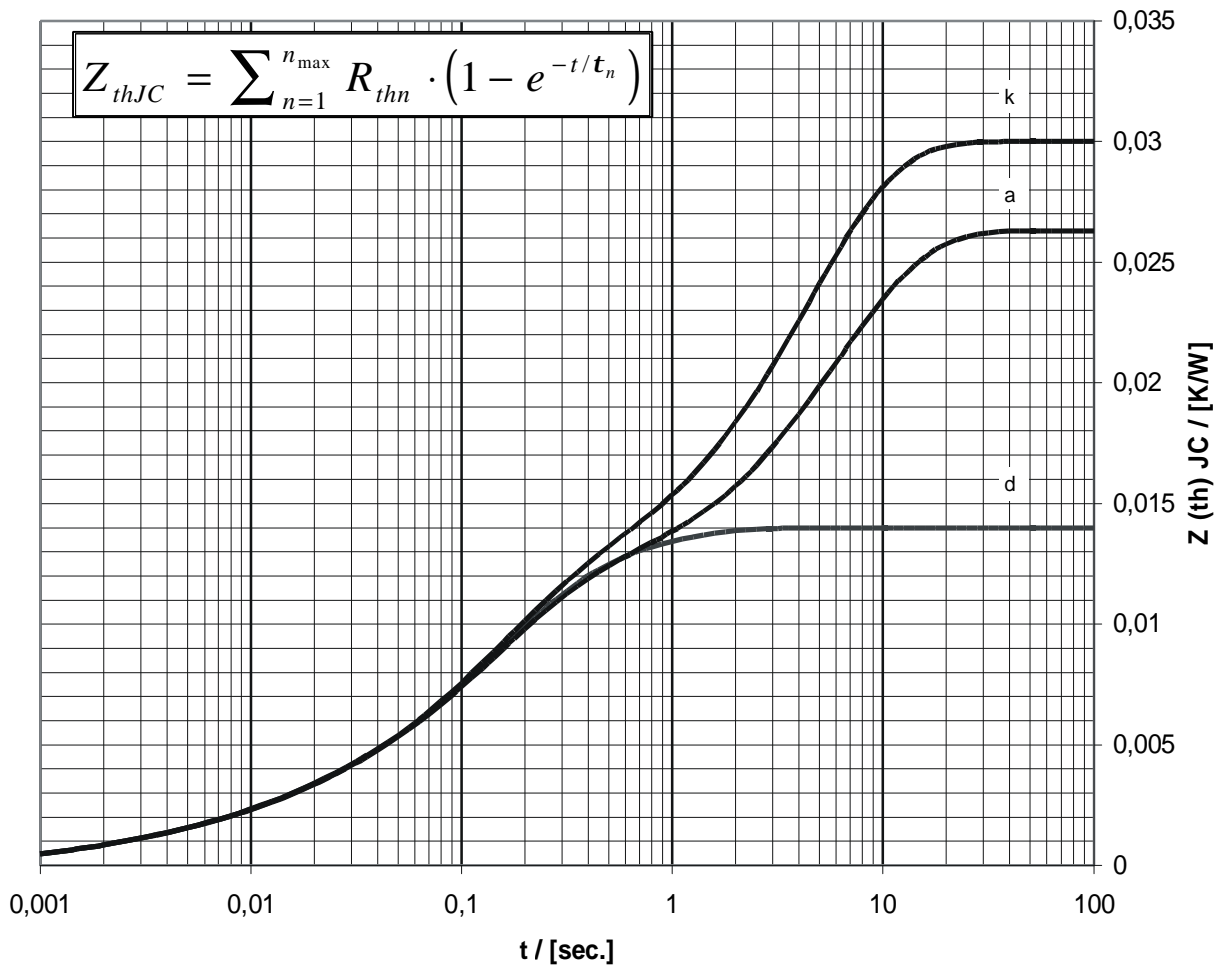


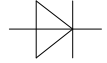


Vorläufige Daten  
Preliminary Data

**Transienter innerer Wärmewiderstand**  
**Transient thermal impedance  $Z_{(th) JC} = f(t)$**

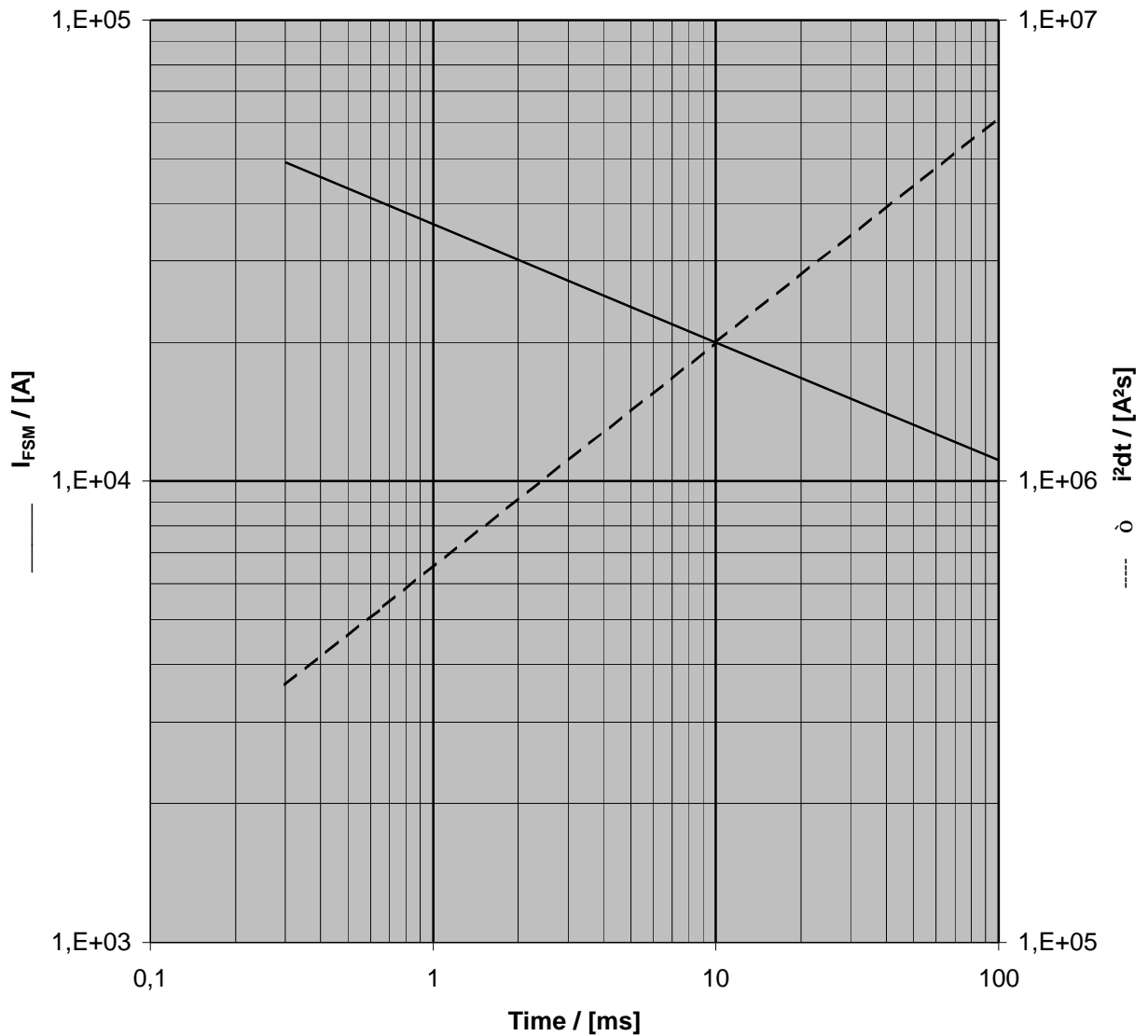
	doppelseitige Kühlung		anodenseitige Kühlung		kathodenseitige Kühlung	
	r [K/W]	[s]	r [K/W]	[s]	r [K/W]	[s]
1	0,00234	0,68	0,01464	6,1	0,01834	4,4
2	0,00667	0,176	0,00667	0,176	0,00667	0,176
3	0,00282	0,0732	0,00282	0,0732	0,00282	0,0732
4	0,00149	0,011	0,00149	0,011	0,00149	0,011
5	0,00068	0,0019	0,00068	0,0019	0,00068	0,0019
	0,014	-	0,0263	-	0,03	-

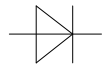




**Surge Current Characteristics  $I_{FSM} = f(t_p)$**   
 **$I^2t$  value       $i^2 dt = f(t_p)$**

Sine half-wave,  $t_{vj} = 160^\circ C$ ,  $v_R = 0$

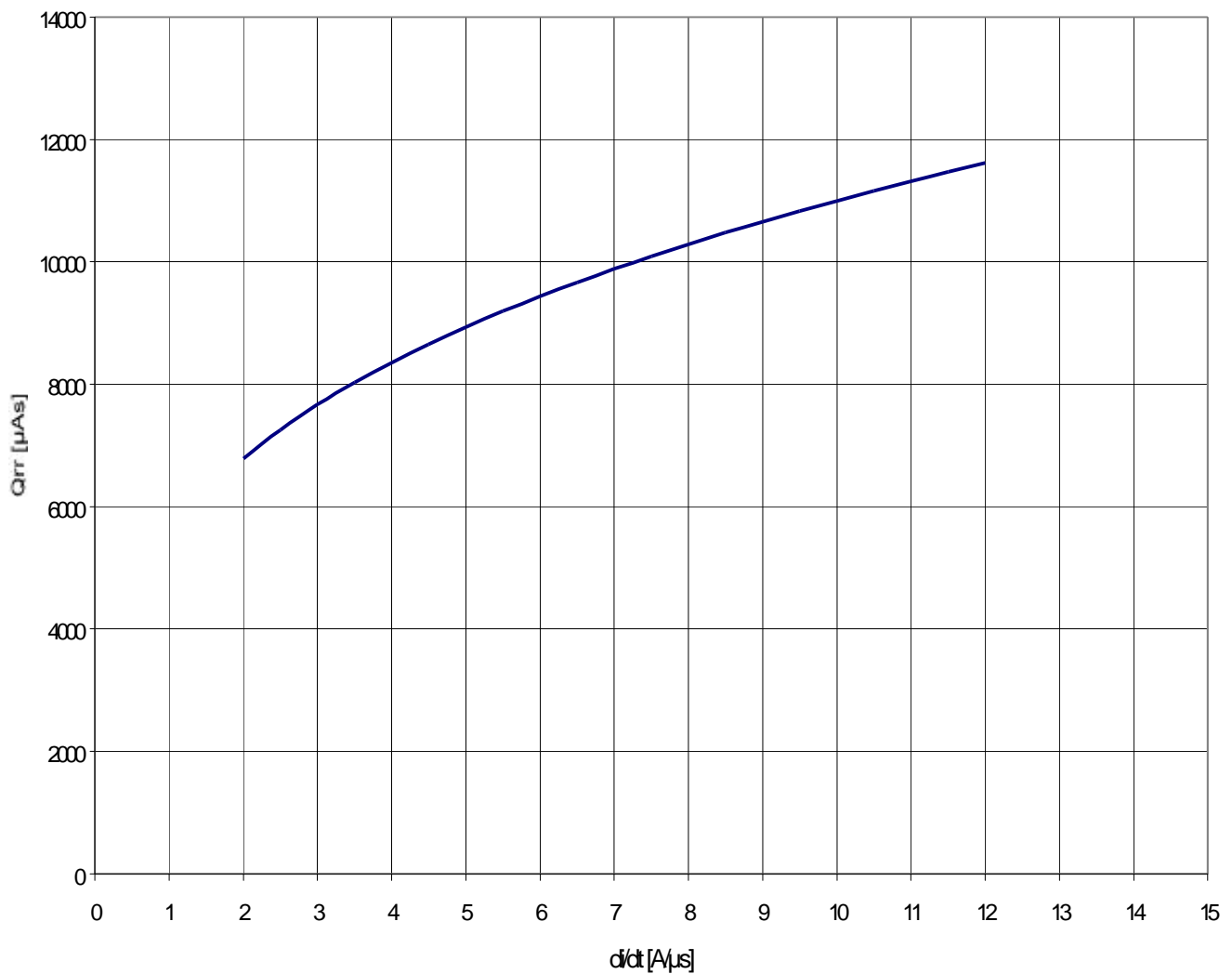


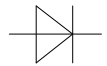


Sperrverzögerungsladung / recovered charge

$$Q_{rr} = f(di/dt)$$

$t_{vj} = 160^{\circ}\text{C}$ ,  $I_{TM} = 1000\text{A}$ ,  $V_r = 1000\text{V}$ ,  $C = 0,5\mu\text{F}$ ,  $R = 39\Omega$





Rückstromspitze / reverse recovery current

$$I_{RM} = f(di/dt)$$

$t_{vj} = 160^{\circ}C, I_{TM} = 1000A, V_r = 1000V, C = 0,5\mu F, R = 39\Omega$

