

Transistor**Elektrische Eigenschaften**Höchstzulässige Werte

V_{CES}		600	V
I_C		50	A
I_{CRM}	$t_p = 1 \text{ ms}$	100	A
P_{tot}	$t_C = 25^\circ\text{C}$	280	W
V_{GE}		20	V
V_{EG}		20	V

Charakteristische Werte

		<u>Characteristic values</u>	
$V_{CE \text{ sat}}$	$i_{CM} = 50 \text{ A}, V_{GE} = 15 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ.	2,1 V
	$i_{CM} = 50 \text{ A}, V_{GE} = 15 \text{ V}, t_{vj} = 25^\circ\text{C}$	max.	2,7 V
$V_{GE (th)}$	$V_{CE} = 5 \text{ V}, i_C = 5 \text{ mA}, t_{vj} = 25^\circ\text{C}$	min.	5 V
	$V_{CE} = 5 \text{ V}, i_C = 5 \text{ mA}, t_{vj} = 25^\circ\text{C}$	max.	8 V
C_{ies}	$V_{CE} = 10 \text{ V}, V_{GE} = 0 \text{ V}, f_o = 1 \text{ MHz}, t_{vj} = 25^\circ\text{C}$	typ.	4,9 nF
	$V_{CE} = 600 \text{ V}, V_{GE} = 0 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ.	0,3 mA
i_{CES}	$V_{CE} = 600 \text{ V}, V_{GE} = 0 \text{ V}, t_{vj} = 125^\circ\text{C}$	typ.	2 mA
	$V_{GE} = 20 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ.	50 nA
i_{GES}	$V_{GE} = 20 \text{ V}, t_{vj} = 25^\circ\text{C}$	max.	500 nA
	$V_{EG} = 20 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ.	50 nA
i_{EGS}	$V_{EG} = 20 \text{ V}, t_{vj} = 25^\circ\text{C}$	max.	500 nA
t_{on}	$i_{CM} = 50 \text{ A}, V_{CE} = 300 \text{ V}, V_{LF} = 15 \text{ V}, R_G = 24 \Omega, t_{vj} = 25^\circ\text{C}$	typ.	0,4 μs
	$i_{CM} = 50 \text{ A}, V_{CE} = 300 \text{ V}, V_{LF} = 15 \text{ V}, R_G = 24 \Omega, t_{vj} = 125^\circ\text{C}$	typ.	0,5 μs
t_s	$i_{CM} = 50 \text{ A}, V_{CE} = 300 \text{ V}, V_{LF} = 15 \text{ V}, V_{LR} = 15 \text{ V}, R_G = 24 \Omega, t_{vj} = 25^\circ\text{C}$	typ.	0,35 μs
	$i_{CM} = 50 \text{ A}, V_{CE} = 300 \text{ V}, V_{LF} = 15 \text{ V}, V_{LR} = 15 \text{ V}, R_G = 24 \Omega, t_{vj} = 125^\circ\text{C}$	typ.	0,45 μs
t_f	$i_{CM} = 50 \text{ A}, V_{CE} = 300 \text{ V}, V_{LF} = 15 \text{ V}, V_{LR} = 15 \text{ V}, R_G = 24 \Omega, t_{vj} = 25^\circ\text{C}$	typ.	0,15 μs
	$i_{CM} = 50 \text{ A}, V_{CE} = 300 \text{ V}, V_{LF} = 15 \text{ V}, V_{LR} = 15 \text{ V}, R_G = 24 \Omega, t_{vj} = 125^\circ\text{C}$	typ.	0,25 μs

Bedingungen für den Kurzschlußschutz

$t_{fg} = 10 \mu\text{s},$
 $V_{LF} = V_{LR} = 15 \text{ V},$
 $R_G = 24 \Omega,$
 $t_{vj} = 125^\circ\text{C},$

Transistor**Electrical properties**Maximum rated values

	600	V
	50	A
	100	A
	280	W
	20	V
	20	V

Characteristic values

		<u>Characteristic values</u>	
$V_{CE \text{ sat}}$	$i_{CM} = 50 \text{ A}, V_{GE} = 15 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ.	2,1 V
	$i_{CM} = 50 \text{ A}, V_{GE} = 15 \text{ V}, t_{vj} = 25^\circ\text{C}$	max.	2,7 V
$V_{GE (th)}$	$V_{CE} = 5 \text{ V}, i_C = 5 \text{ mA}, t_{vj} = 25^\circ\text{C}$	min.	5 V
	$V_{CE} = 5 \text{ V}, i_C = 5 \text{ mA}, t_{vj} = 25^\circ\text{C}$	max.	8 V
C_{ies}	$V_{CE} = 10 \text{ V}, V_{GE} = 0 \text{ V}, f_o = 1 \text{ MHz}, t_{vj} = 25^\circ\text{C}$	typ.	4,9 nF
	$V_{CE} = 600 \text{ V}, V_{GE} = 0 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ.	0,3 mA
i_{CES}	$V_{CE} = 600 \text{ V}, V_{GE} = 0 \text{ V}, t_{vj} = 125^\circ\text{C}$	typ.	2 mA
	$V_{GE} = 20 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ.	50 nA
i_{GES}	$V_{GE} = 20 \text{ V}, t_{vj} = 25^\circ\text{C}$	max.	500 nA
	$V_{EG} = 20 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ.	50 nA
i_{EGS}	$V_{EG} = 20 \text{ V}, t_{vj} = 25^\circ\text{C}$	max.	500 nA
t_{on}	$i_{CM} = 50 \text{ A}, V_{CE} = 300 \text{ V}, V_{LF} = 15 \text{ V}, R_G = 24 \Omega, t_{vj} = 25^\circ\text{C}$	typ.	0,4 μs
	$i_{CM} = 50 \text{ A}, V_{CE} = 300 \text{ V}, V_{LF} = 15 \text{ V}, R_G = 24 \Omega, t_{vj} = 125^\circ\text{C}$	typ.	0,5 μs
t_s	$i_{CM} = 50 \text{ A}, V_{CE} = 300 \text{ V}, V_{LF} = 15 \text{ V}, V_{LR} = 15 \text{ V}, R_G = 24 \Omega, t_{vj} = 25^\circ\text{C}$	typ.	0,35 μs
	$i_{CM} = 50 \text{ A}, V_{CE} = 300 \text{ V}, V_{LF} = 15 \text{ V}, V_{LR} = 15 \text{ V}, R_G = 24 \Omega, t_{vj} = 125^\circ\text{C}$	typ.	0,45 μs
t_f	$i_{CM} = 50 \text{ A}, V_{CE} = 300 \text{ V}, V_{LF} = 15 \text{ V}, V_{LR} = 15 \text{ V}, R_G = 24 \Omega, t_{vj} = 25^\circ\text{C}$	typ.	0,15 μs
	$i_{CM} = 50 \text{ A}, V_{CE} = 300 \text{ V}, V_{LF} = 15 \text{ V}, V_{LR} = 15 \text{ V}, R_G = 24 \Omega, t_{vj} = 125^\circ\text{C}$	typ.	0,25 μs

Conditions for protection against short circuits

$V_{CC} = 350 \text{ V},$
 $V_{CEM} = 500 \text{ V},$
 $i_{CMK1} \approx 250 \text{ A},$
 $i_{CMK2} \approx 150 \text{ A},$

Thermische Eigenschaften R_{thJC}

DC, pro Baustein / per module
 DC, pro Zweig / per arm

0,075 $^\circ\text{C/W}$
 0,450 $^\circ\text{C/W}$

 $t_{vj \text{ max}}$ $t_{vj \text{ op}}$ t_{stg} 150 $^\circ\text{C}$ - 40 / + 150 $^\circ\text{C}$ - 40 / + 125 $^\circ\text{C}$ **Inversdiode****Inverse diode****Elektrische Eigenschaften****Electrical properties**Höchstzulässige Werte $I_{F(max)}$ I_{FRM} $t_p = 1 \text{ ms}$

50 A

100 A

Charakteristische Werte

		<u>Characteristic values</u>	
V_F	$I_F = 50 \text{ A}, V_{GE} = 0 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ.	2,3 V
	$I_F = 50 \text{ A}, V_{GE} = 0 \text{ V}, t_{vj} = 25^\circ\text{C}$	max.	3 V
I_{RM}	$I_{FM} = 50 \text{ A}, -di_F/dt = 100 \text{ A}/\mu\text{s}$		
	$V_{EG} = 10 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ.	3 A
Q_r	$I_{FM} = 50 \text{ A}, -di_F/dt = 100 \text{ A}/\mu\text{s}$		
	$V_{EG} = 10 \text{ V}, t_{vj} = 125^\circ\text{C}$	typ.	6 A
Q_r	$I_{FM} = 50 \text{ A}, -di_F/dt = 100 \text{ A}/\mu\text{s}$		
	$V_{EG} = 10 \text{ V}, t_{vj} = 25^\circ\text{C}$	typ.	0,25 μAs
Q_r	$I_{FM} = 50 \text{ A}, -di_F/dt = 100 \text{ A}/\mu\text{s}$		
	$V_{EG} = 10 \text{ V}, t_{vj} = 125^\circ\text{C}$	typ.	1 μAs

Thermische Eigenschaften**Thermal properties** R_{thJC}

DC, pro Baustein / per module
 DC, pro Zweig / per arm

0,150 $^\circ\text{C/W}$
 0,900 $^\circ\text{C/W}$

 $t_{vj \text{ max}}$ $t_{vj \text{ op}}$ t_{stg} 125 $^\circ\text{C}$ - 40 / + 125 $^\circ\text{C}$ - 40 / + 125 $^\circ\text{C}$ **Innere Isolation**

Isoliermaterial: Al N

 V_{ISOL} RMS ($f=50 \text{ Hz}, t=1 \text{ min}$)

2,5 kV

Internal insulation

Insulating material: Al N

Mechanische Eigenschaften**Mechanical properties**

G

500 g

M 1

3 Nm

M 2

2 Nm

Maßbild

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outline

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