Parameter	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
Thermal characteristics						
Thermal resistance, junction - case	R_{thJC}		-	-	3.6	K/W
Thermal resistance, junction - ambient	R_{thJA}	SMD version, device on PCB, minmal footprint	-	-	75	
		SMD Version, device on PCB, 6 cm^2 cooling[3]	-	-	50	
Soldering temperature reflowsoldering	T_{sold}	reflow MSL 3	-	-	260	°C

Electrical characteristics, at T_j=25 °C, unless otherwise specified

Static characteristics

Parameter	Symbol	Conditions	min.	typ.	max.	Unit
DC blocking voltage	V_{DC}	I_R=0.05 mA	600	-	-	V
Diode forward voltage	V_F	I_F=4 A, T_j=25 °C	-	1.7	1.9	
		I_F=4 A, T_j=150 °C	-	2	2.4	
		I_F=_ A, T_j=25°C		1.9	2.1	
		I_F=_ A, T_j=150°C		2.3	2.9	
Reverse current	I_R	V_R=600 V, T_j=25 °C	-	0.5	50	µA
		V_R=600 V, T_j=150 °C	-	2	500	

AC characteristics

Parameter	Symbol	Conditions	min.	typ.	max.	Unit
Total capacitive charge	Q_c	V_R=400 V, I_F≤$I_{F,max}$, di_F/dt=200 A/µs, T_j=150 °C	-	8	-	nC
Switching time[4]	t_c		-	-	<10	ns
Total capacitance	C	V_R=1 V, f= MHz	-	130	-	pF
		V_R=300 V, f=1 MHz	-	20	-	
		V_R=600 V, f=1 MHz	-	20	-	

[1] J-STD20 and JESD22

[2] All devices tested under avalanche conditions, for a time periode of 5ms at 20 mA.

[3] Device on 40mm*40mm*1.5mm epox PCB FR4 with 6cm^2 (one layer, 70µm thick) copper area for drain connection. PCB is vertikal with out blown air.

[4] t_c is the time constant for the capacitive displacement current waveform (independent from T_j, I_{LOAD} and di/dt), different from t_{rr}, which is dependent on T_j, I_{LOAD}, di/dt. No reverse recovery time constant t_{rr} due to absence of minority carrier injection.

[5] Only capacitive charge occuring, guaranteed by design.

[6] Repetitive condition defined by T_j≤ 175°C

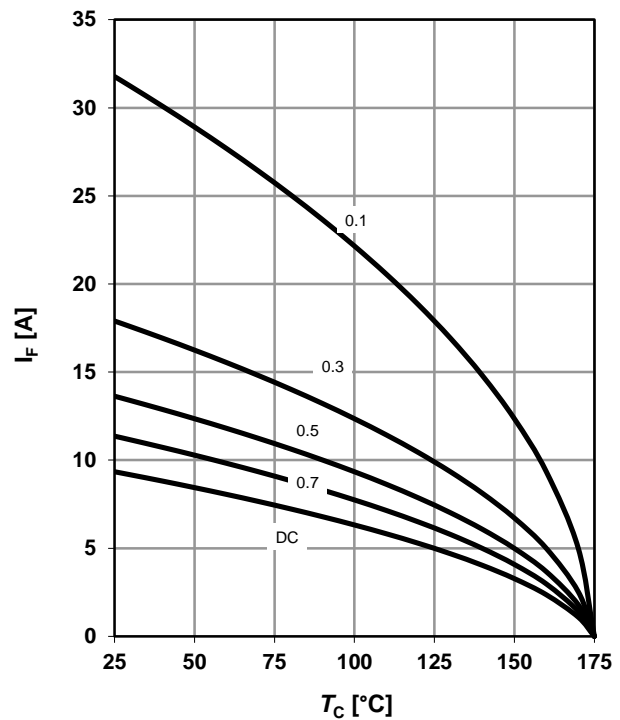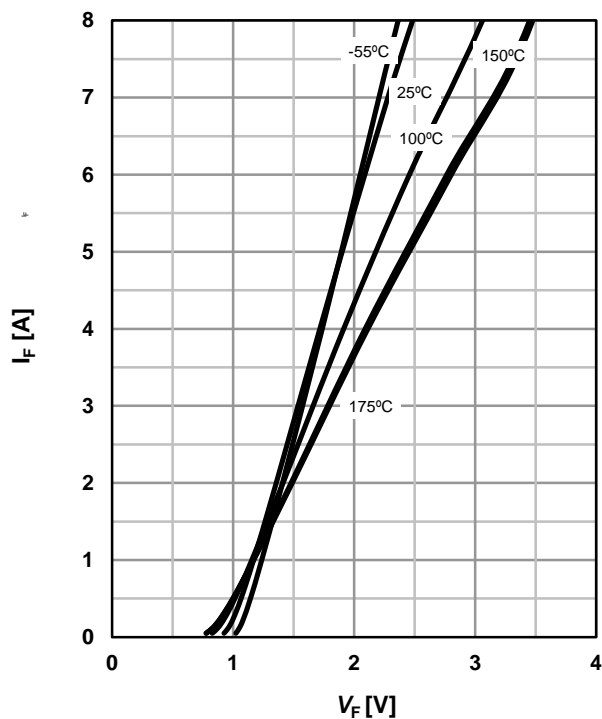## 1 Power dissipation

$P_{tot}=f(T_C)$
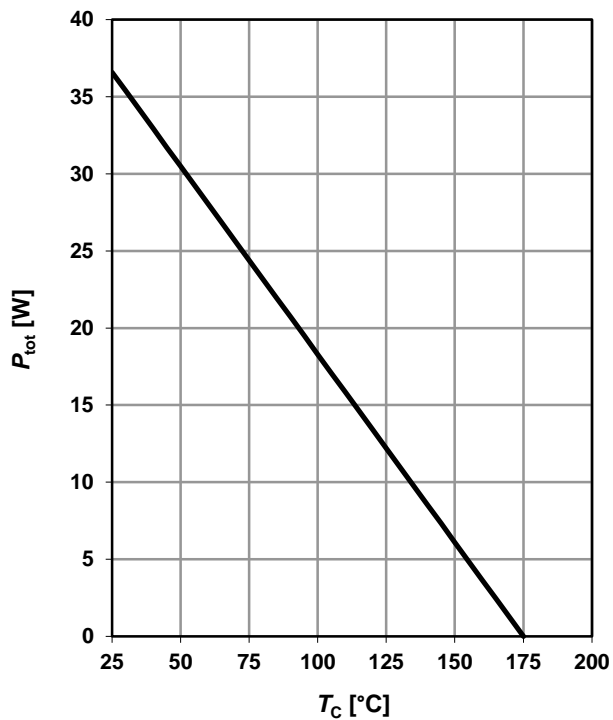
2 Diode forward current
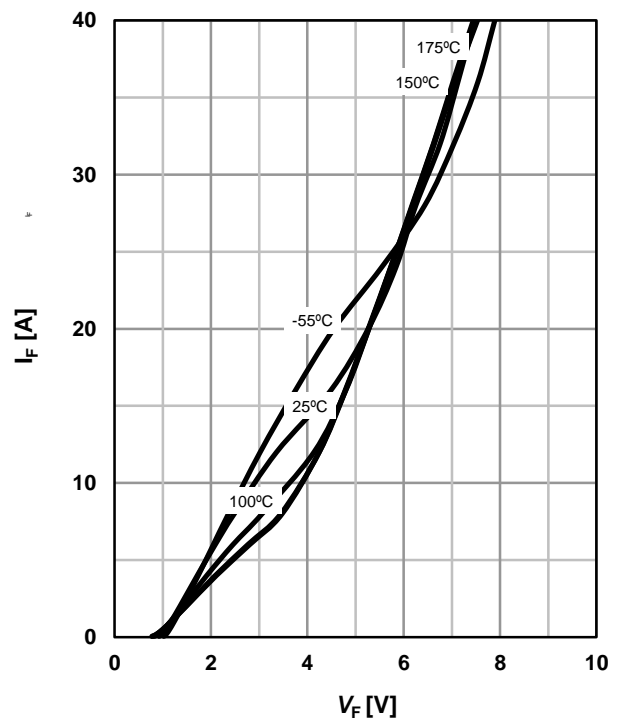
$I_F=f(T_C)^{4)}$; $T_j \leq 175$ °C; parameter: D= t_p/T

3 Typ. forward characteristic

$I_F=f(V_F)$; t_p=400 µs; parameter: T_j

4 Typ. forward characteristic in surge current mode

$I_F=f(V_F)$; t_p=400 µs; parameter: T_j
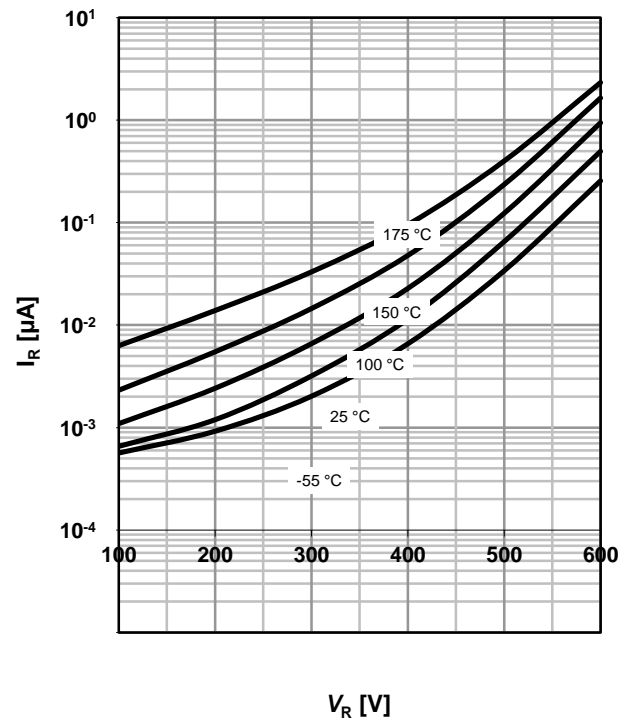

Rev. 2.3

page 3

2013-02-12

5 Max. repetitive pulse current
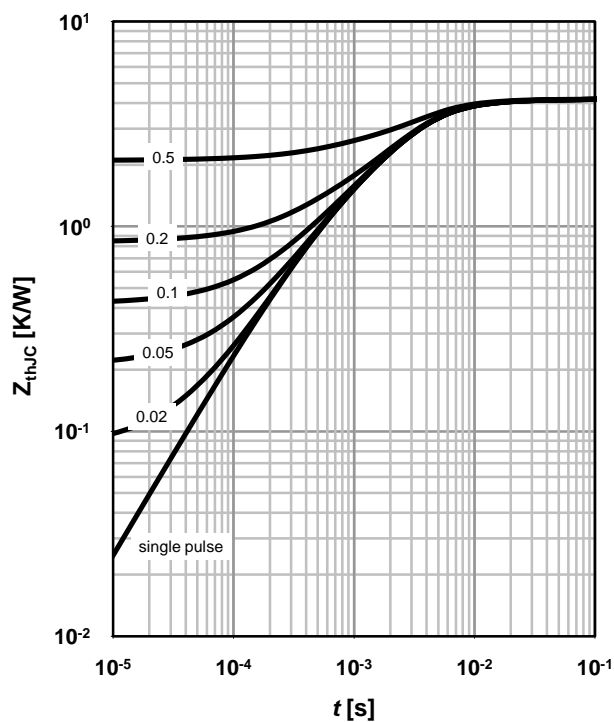
I_{pulse}=f(t_P)[4)5)]; parameter T_C
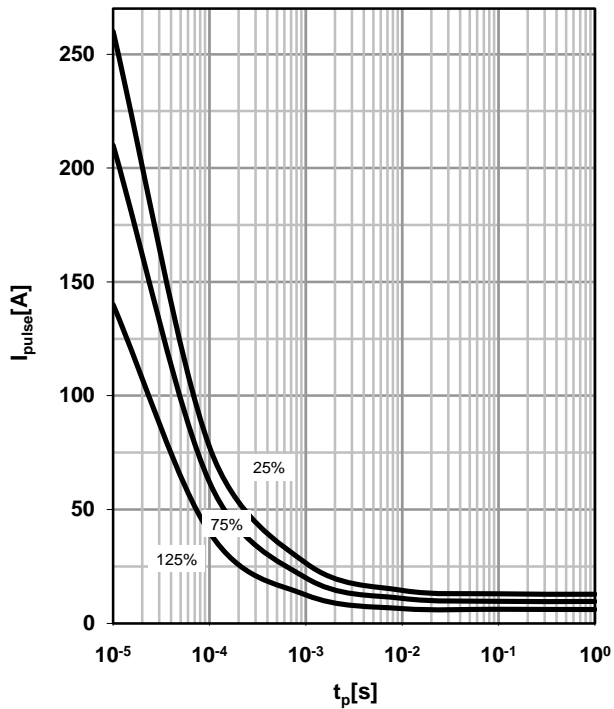
6 Typ. reverse current vs. reverse voltage
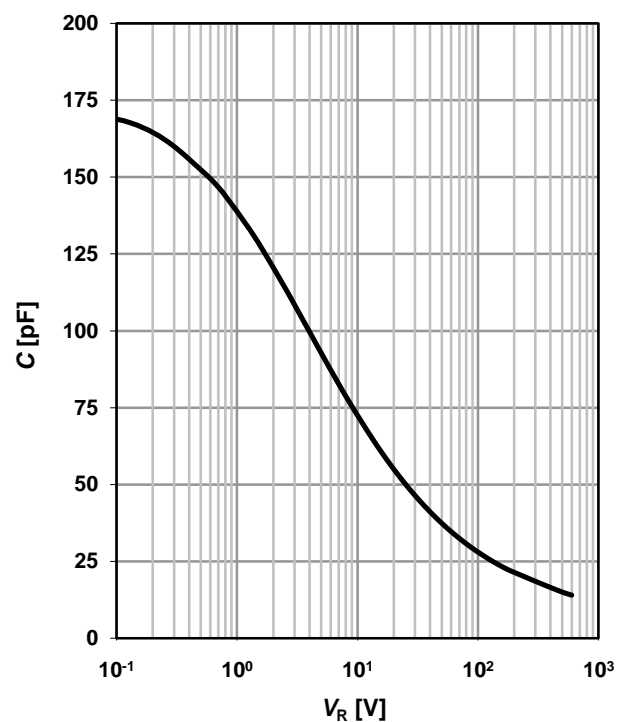
I_R=f(V_R); parameter: T_j

7 Transient thermal impedance

Z_{thJC}=f(t_p); parameter: $D = t_P/T$

8 Typ. capacitance vs. reverse voltage

C=f(V_R); T_C=25 °C, f=1 MHz

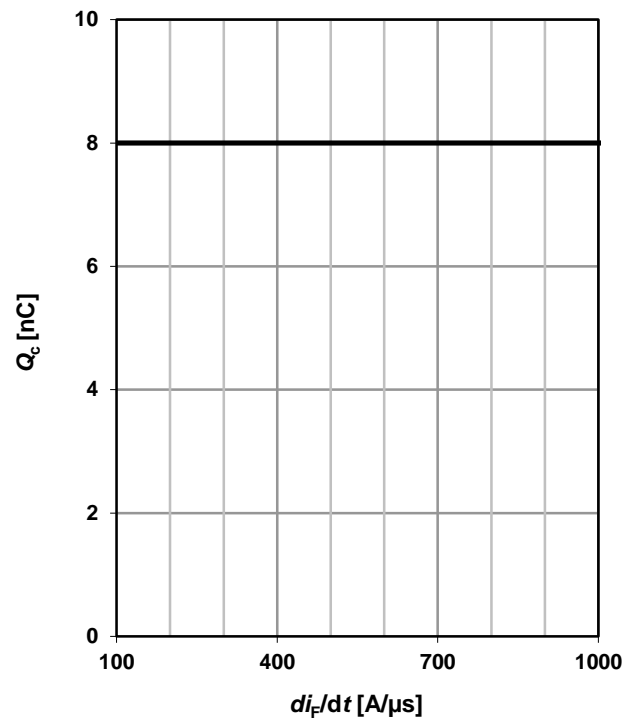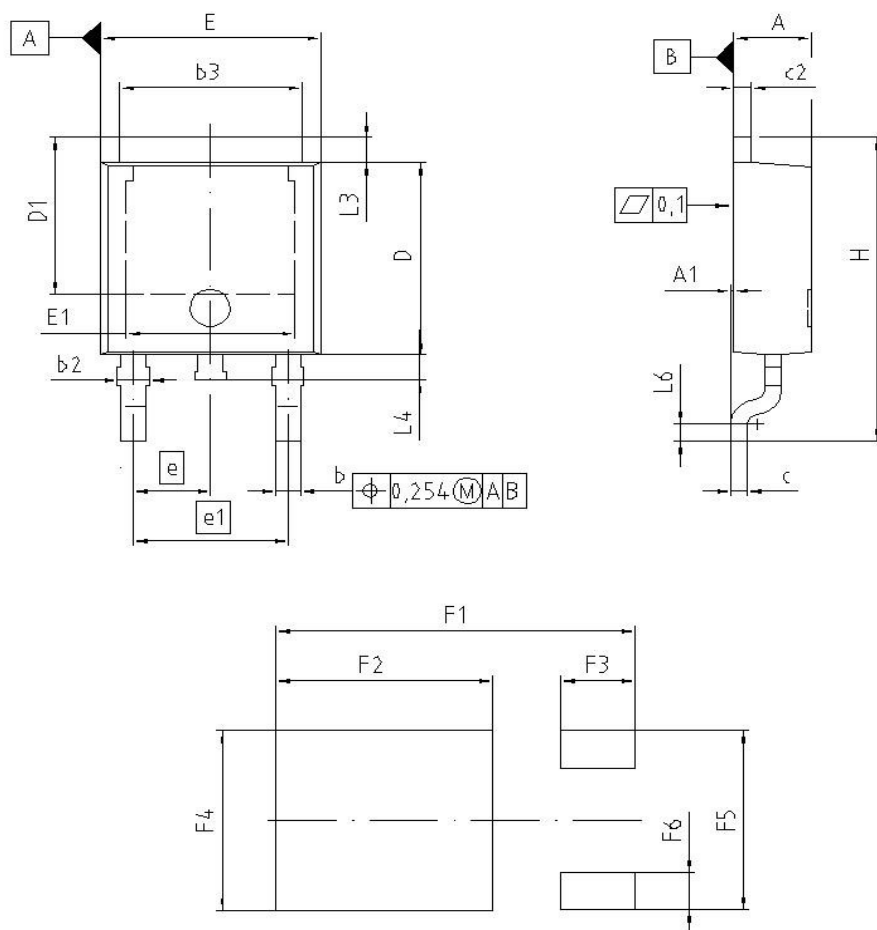**9 Typ. C stored energy**

$E_\text{C}=\text{f}(V_\text{R})$
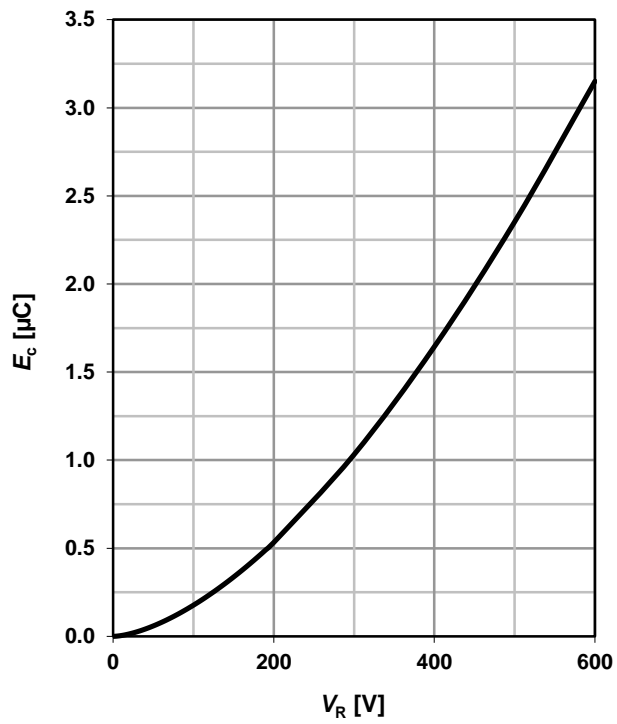
10 Typ. capacitance charge vs. current slope

$Q_\text{C}=\text{f}(\text{d}i_\text{F}/\text{d}t)^{5)}$; $T_\text{j}=150\,°\text{C}$; $I_\text{F}\leq I_\text{F,max}$

Package Outline:PG-TO252-3-1/TO252-3-11/TO252-3-21

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.159	2.413	0.085	0.095
A1	0.000	0.150	0.000	0.006
b	0.635	0.889	0.025	0.035
b2	0.650	1.150	0.026	0.045
b3	5.004	5.500	0.197	0.217
c	0.457	0.580	0.018	0.023
c2	0.460	0.980	0.018	0.039
D	5.969	6.223	0.235	0.245
D1	5.020	5.842	0.198	0.230
E	6.400	6.731	0.252	0.265
E1	4.850	5.207	0.191	0.205
e	2.286		0.090	
e1	4.572		0.180	
N	3		3	
H	9.400	10.480	0.370	0.413
L3	0.900	1.143	0.035	0.045
L4	0.584	0.950	0.023	0.037
L6	0.510	0.686	0.020	0.027
F1	10.500	10.700	0.413	0.421
F2	6.300	6.500	0.248	0.256
F3	2.100	2.300	0.083	0.091
F4	5.700	5.900	0.224	0.232
F5	5.660	5.860	0.222	0.231
F6	1.100	1.300	0.043	0.051

REFERENCE
JEDEC TO252

SCALE

EUROPEAN PROJECTION

ISSUE DATE
21-09-2005

FILE
TO252_1

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Infineon Technologies AG
81726 Munich, Germany
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