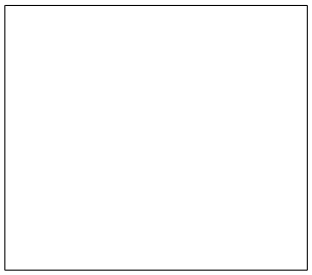
PG-TO 220 FP

CoolMOS™ is a revolutionary technology for high voltage power MOSFETs, designed according to the superjunction (SJ) principle and pioneered by Infineon Technologies. CoolMOS™ CE is a price-performance optimized platform enabling to target cost sensitive applications in Consumer and Lighting markets by still meeting highest efficiency standards. The new series provides all benefits of a fast switching Superjunction MOSFET while not sacrificing ease of use and offering the best cost down performance ratio available on the market.



- Extremely low losses due to very low FOM Rdson*Qg and Eoss
- Very high commutation ruggedness
- Easy to use/drive
- Pb-free plating, Halogen free mold compound
- Qualified for standard grade applications

PFC stages, hard switching PWM stages and resonant switching stages for e.g. PC Silverbox, Adapter, LCD & PDP TV and indoor lighting.

Pea e e F MOSFET a a e g e e f f e e bead e ga e e a a e e e ge e a ec e ded

		Ω

at T_j = 25°C, unless otherwise specified

	I_D					
	$I_{D,pulse}$					
	E_{AS}					
	E_{AR}					
	I_{AR}					
						V_{DS} =0...400V
	V_{GS}					
	P_{tot}					T_C=25°C
	T_j, T_{stg}					
	I_S					T_C=25°C
	$I_{S,pulse}$					
						V_{DS} =0...400V, I_{SD}<= I_S, T_j=25°C
					µ	V_{DS} =0...400V, I_{SD}<= I_S, T_j=25°C
	V_{ISO}					V_{rms}, T_C=25°C, =1min

	R_{thJC}					
	R_{thJA}					
	T_{sold}					

[3] V_{Clink}=400V; $V_{DS,peak}$< $V_{(BR)DSS}$; identical low side and high side switch with identical R_G

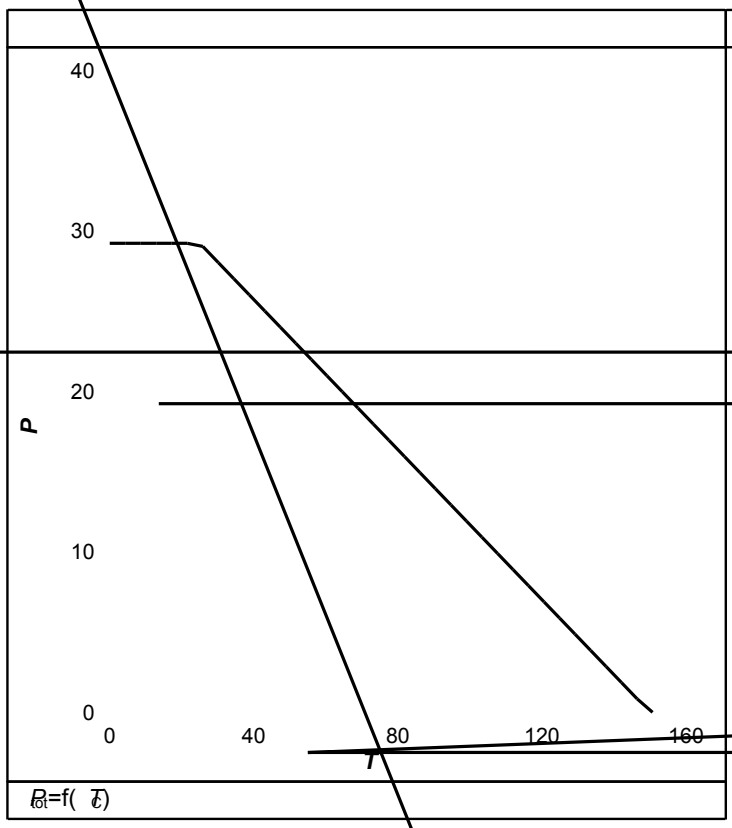
	$V_{(BR)DSS}$					V_{GS}=0V, I_D=1mA
	$V_{(GS)th}$					V_{DS}= V_{GS}, I_D=0.26mA
	I_{DSS}				µ	V_{DS}=500V, V_{GS}=0V, T_j=25°C V_{DS}=500V, V_{GS}=0V, T_j=150°C
	I_{GSS}					V_{GS}=20V, V_{DS}=0V
	$R_{DS(on)}$				Ω	V_{GS}=13V, I_D=3.2A, T_j=25°C V_{GS}=13V, I_D=3.2A, T_j=150°C
	R_G				Ω	f=1 MHz, open drain

	C_{iss}					V_{GS}=0V, V_{DS}=100V, f=1MHz
	C_{oss}					V_{GS}=0V, V_{DS}=100V, f=1MHz
	$C_{o(er)}$					V_{GS}=0V, V_{DS}=0...400V
	$C_{o(tr)}$					I_D=constant, V_{GS}=0V, V_{DS}=0...400V
	$t_{d(on)}$					V_{DD}=400V, V_{GS}=13V, I_D=3.9A, R_G=3.4Ω
	t_r					V_{DD}=400V, V_{GS}=13V, I_D=3.9A, R_G=3.4Ω
	$t_{d(off)}$					V_{DD}=400V, V_{GS}=13V, I_D=3.9A, R_G=3.4Ω
	t_f					V_{DD}=400V, V_{GS}=13V, I_D=3.9A, R_G=3.4Ω

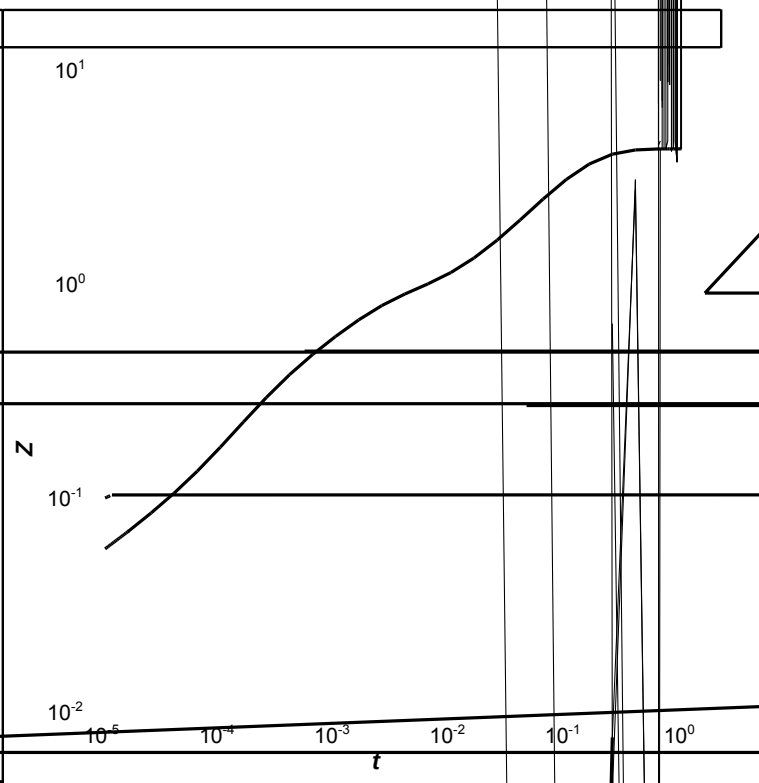
	Q_{gs}					V_{DD}=400V, I_D=3.9A, V_{GS}=0 to 10V
	Q_{gd}					V_{DD}=400V, I_D=3.9A, V_{GS}=0 to 10V
	Q_g					V_{DD}=400V, I_D=3.9A, V_{GS}=0 to 10V
	$V_{plateau}$					V_{DD}=400V, I_D=3.9A, V_{GS}=0 to 10V

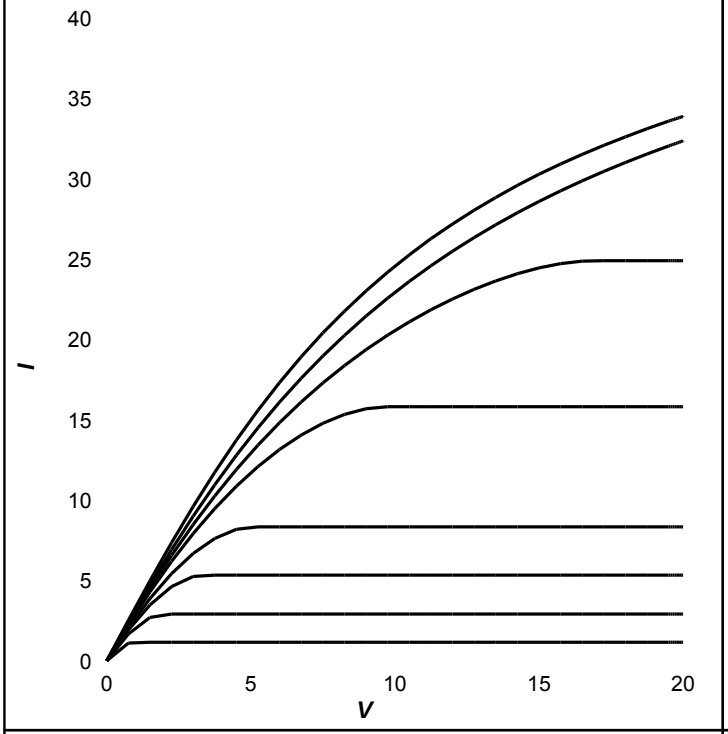
1) $C_{o(er)}$ is a fixed capacitance that gives the same stored energy as C_{oss} while V_{DS} is rising from 0 to 400V
2) $C_{o(tr)}$ is a fixed capacitance that gives the same charging time as C_{oss} while V_{DS} is rising from 0 to 400V

	V_{SD}					V_{GS}=0V, I_F=3.9A, T_j=25°C
	t_{rr}					V_R=400V, I_F=3.9A, dI_F/dt =100A/µs
	Q_{rr}					V_R=400V, I_F=3.9A, dI_F/dt =100A/µs
	I_{rrm}					V_R=400V, I_F=3.9A, dI_F/dt =100A/µs

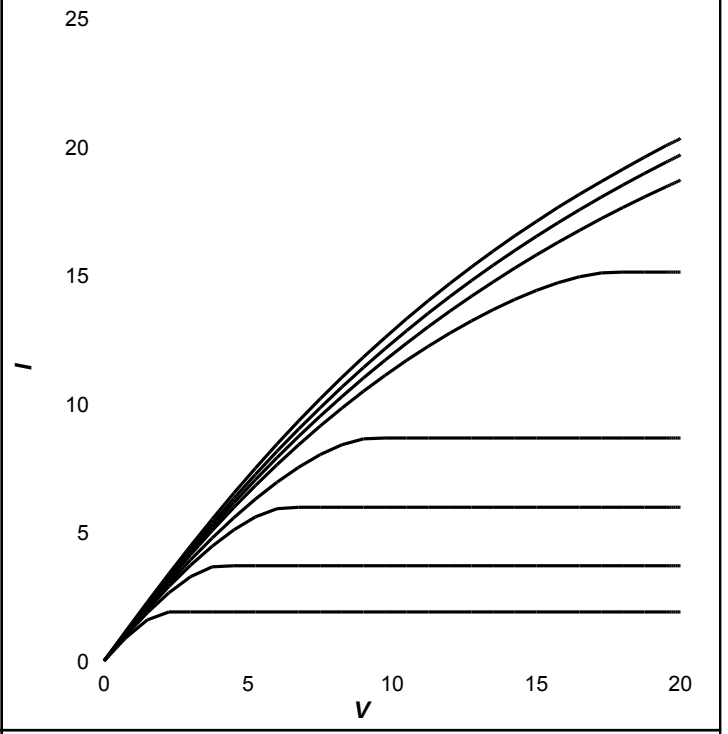

40
30
20
10
0
P
0
40
80
120
160
T

P_{tot}=f(T_c)

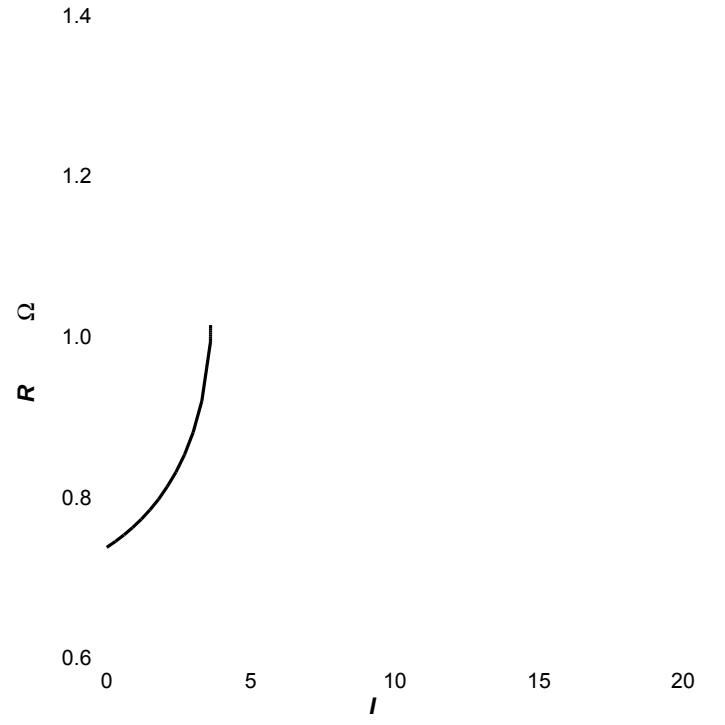

10^1
10^0
10^{-1}
10^{-2}
Z
10^{-5}
10^{-4}
10^{-3}
10^{-2}
10^{-1}
10^0
t

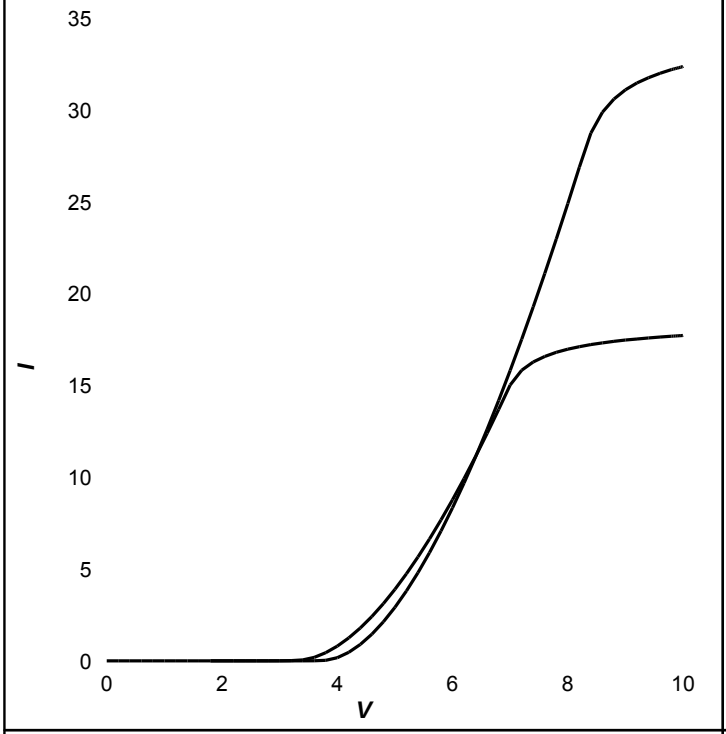


I_D=f(V_{DS}); T_j=25 °C; parameter: V_{GS}

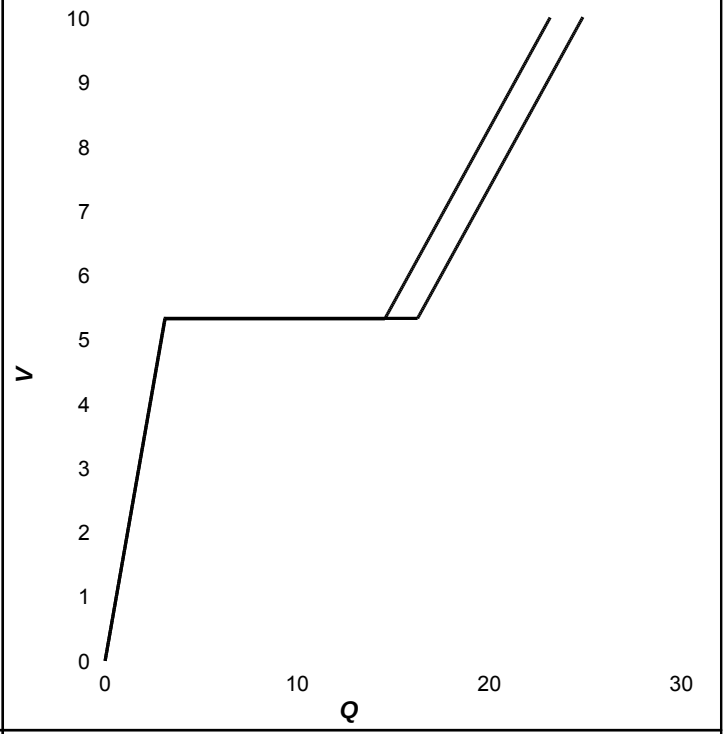


I_D=f(V_{DS}); T_j=125 °C; parameter: V_{GS}

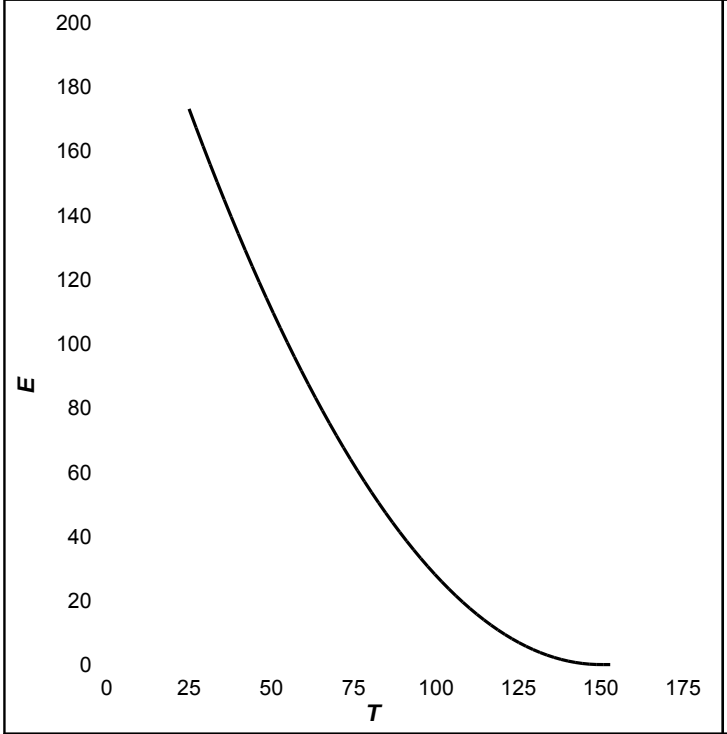




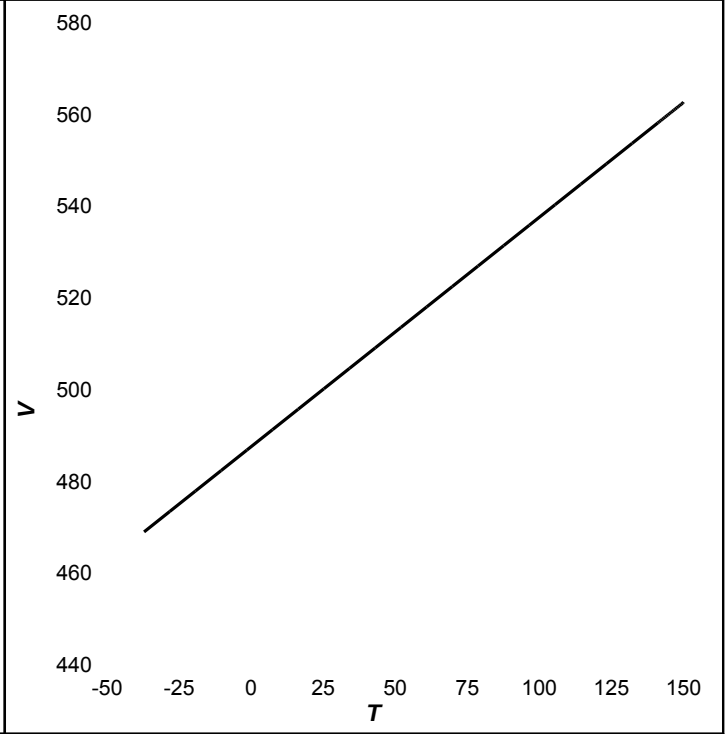
I_D=f(V_{GS}); V_{DS}=20V; parameter: T_j



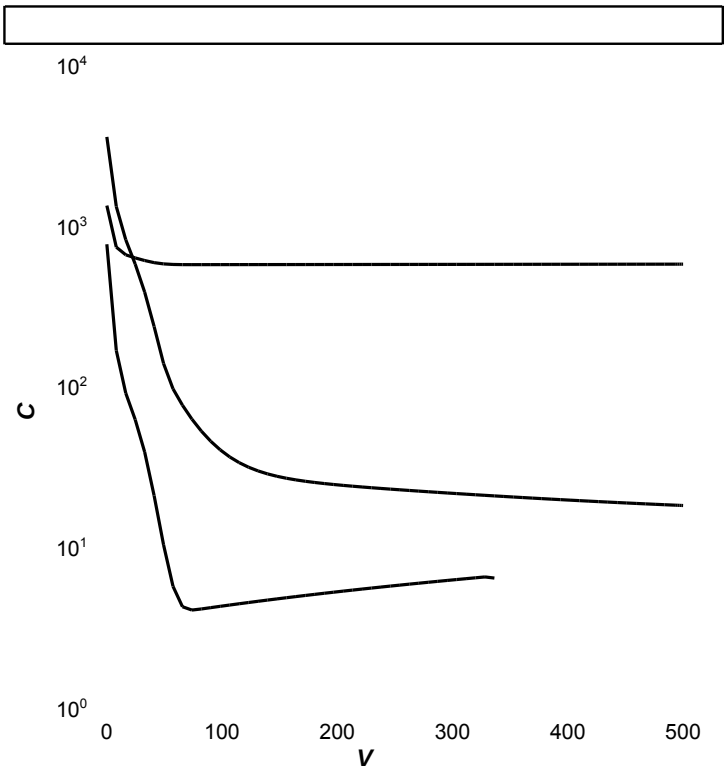
V_{GS}=f(Q_{gate}); I_D=3.9 A pulsed; parameter: V_{DD}



E_{AS}=f(T_j); I_D=4 A; V_{DD}=50 V



$V_{BR(DSS)}$=f(T_j); I_D=1 mA


10^4
10^3
10^2
10^1
10^0
C
0
100
200
300
400
500
V

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