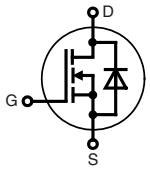
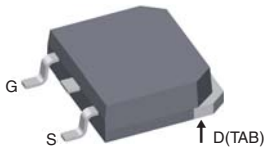
CoolMOS™ [1] Power MOSFET

I_{D25} = 66 A
V_{DSS} = 600 V
$R_{DS(on)\ max}$ = 0.045 Ω

N-Channel Enhancement Mode
Low R_{DSon}, High V_{DSS} MOSFET
Ultra low gate charge



TO-268 AA



MOSFET			
Symbol	**Conditions**	**Maximum Ratings**	
V_{DSS}	T_{VJ} = 25°C	600	V
V_{GS}		± 20	V
I_{D25}	T_C = 25°C	66	A
I_{D90}	T_C = 90°C	46	A
E_{AS}	single pulse	1950	mJ
E_{AR}	repetitive; I_D = 11 A; T_C = 25°C	3	mJ
dV/dt	MOSFET dV/dt ruggedness V_{DS} = 0...480 V	50	V/ns

Symbol	Conditions	Characteristic Values (T_{VJ} = 25°C, unless otherwise specified)			
		min.	typ.	max.	
R_{DSon}	V_{GS} = 10 V; I_D = 44 A		40	45	mΩ
$V_{GS(th)}$	V_{DS} = V_{GS}; I_D = 3 mA	2.5	3	3.5	V
I_{DSS}	V_{DS} = 600 V; V_{GS} = 0 V; T_{VJ} = 25°C			10	µA
	T_{VJ} = 125°C		50		µA
I_{GSS}	V_{GS} = ± 20 V; V_{DS} = 0 V			100	nA
C_{iss}	V_{GS} = 0 V; V_{DS} = 100 V		6800		pF
C_{oss}	f = 1 MHz		320		pF
Q_g	V_{GS} = 0 to 10 V; V_{DS} = 400 V; I_D = 44 A		150	190	nC
Q_{gs}			35		nC
Q_{gd}			50		nC
$t_{d(on)}$	V_{GS} = 10 V; V_{DS} = 400 V		30		ns
t_r	I_D = 44 A; R_G = 3.3 Ω		20		ns
$t_{d(off)}$			100		ns
t_f			10		ns
R_{thJC}				0.23	K/W

Features

- fast CoolMOS™ [1] power MOSFET 4th generation
  - High blocking capability
  - Lowest resistance
  - Avalanche rated for unclamped inductive switching (UIS)
  - Low thermal resistance due to reduced chip thickness
- Enhanced total power density

Applications

- Switched mode power supplies (SMPS)
- Uninterruptible power supplies (UPS)
- Power factor correction (PFC)
- Welding
- Inductive heating
- PDP and LCD adapter

[1] CoolMOS™ is a trademark of Infineon Technologies AG.

Source-Drain Diode

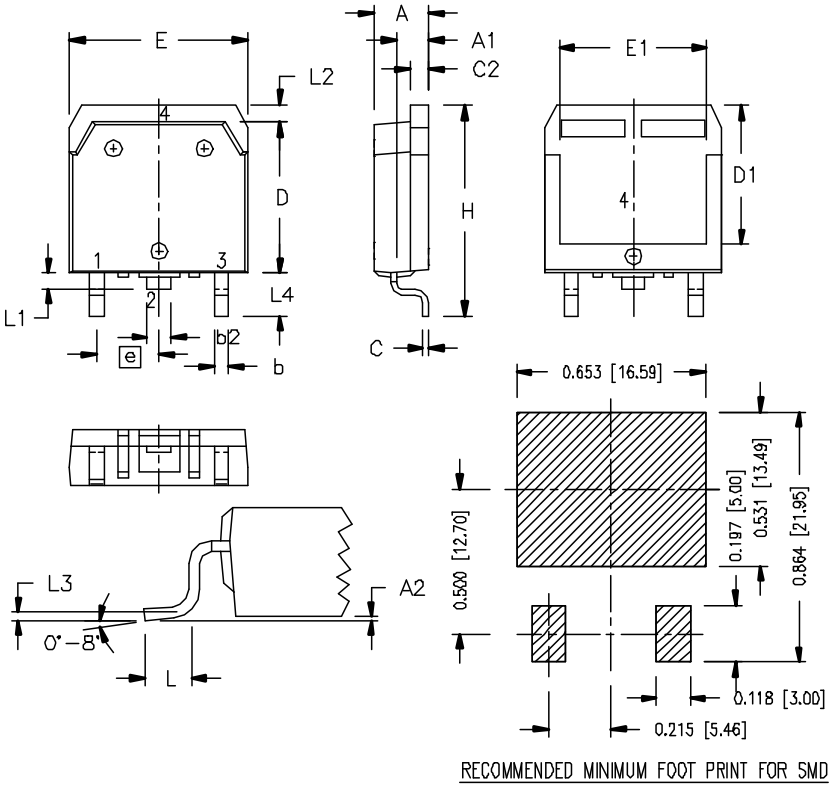
Symbol	Conditions	Characteristic Values (T_{VJ} = 25°C, unless otherwise specified) min.	typ.	max.	
I_S	V_{GS} = 0 V			44	A
V_{SD}	I_F = 44 A; V_{GS} = 0 V		0.9	1.2	V
t_{rr}	I_F = 44 A; -di_F/dt = 100 A/µs; V_R = 400 V		600		ns
Q_{RM}			17		µC
I_{RM}			60		A

Component

Symbol	Conditions	Maximum Ratings	
T_{VJ}	operating	-55...+150	°C
T_{stg}		-55...+150	°C

Symbol	Conditions	Characteristic Values min.	typ.	max.	
Weight			6		g

TO-247 AD Outline



SYM	INCHES MIN	INCHES MAX	MILLIMETERS MIN	MILLIMETERS MAX
A	.193	.201	4.90	5.10
A1	.106	.114	2.70	2.90
A2	.001	.010	0.02	0.25
b	.045	.057	1.15	1.45
b2	.075	.083	1.90	2.10
C	.016	.026	0.40	0.65
C2	.057	.063	1.45	1.60
D	.543	.551	13.80	14.00
D1	.488	.500	12.40	12.70
E	.624	.632	15.85	16.05
E1	.524	.535	13.30	13.60
e	.215 BSC		5.45 BSC	
H	.736	.752	18.70	19.10
L	.094	.106	2.40	2.70
L1	.047	.055	1.20	1.40
L2	.039	.045	1.00	1.15
L3	.010 BSC		0.25 BSC	
L4	.150	.161	3.80	4.10

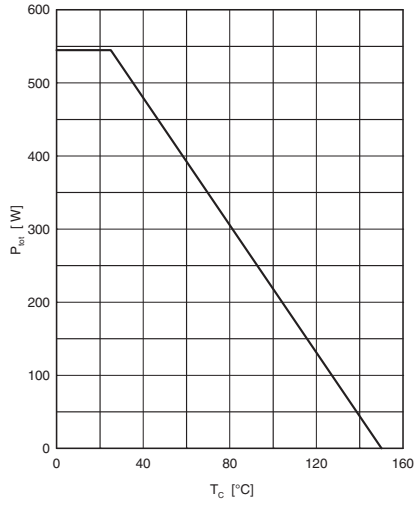


Fig. 1 Power dissipation

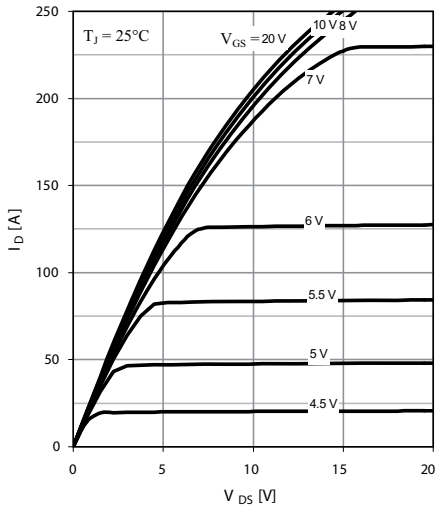


Fig. 2 Typ. output characteristics

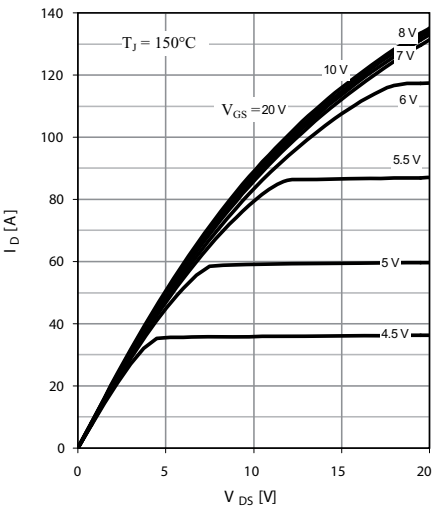


Fig. 3 Typ. output characteristics

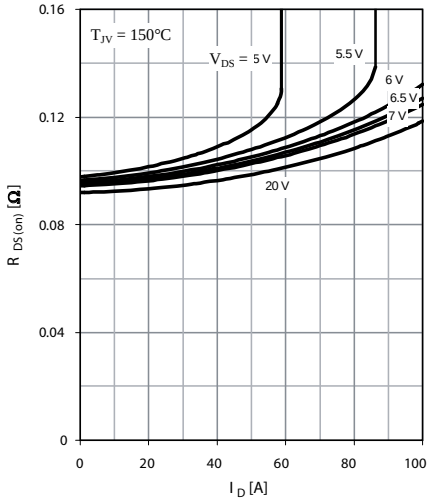


Fig. 4 Typ. drain-source on-state resistance characteristics of IGBT

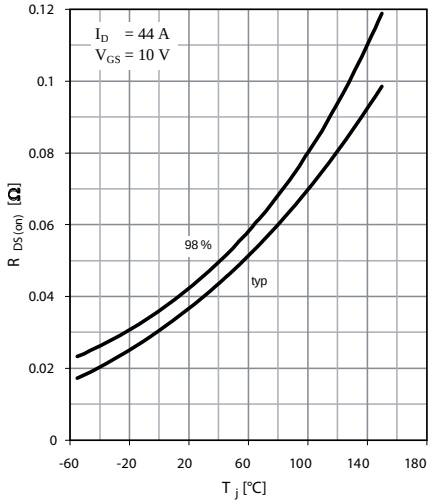


Fig. 5 Drain-source on-state resistance

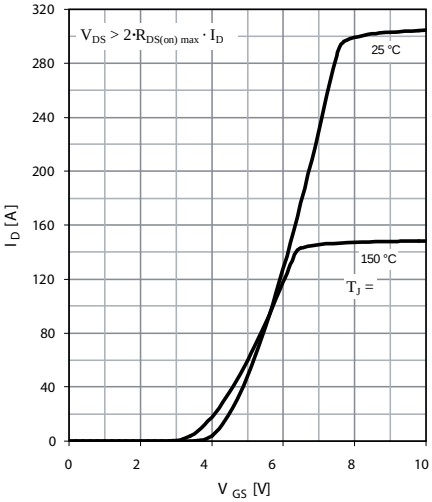


Fig. 6 Typ. transfer characteristics

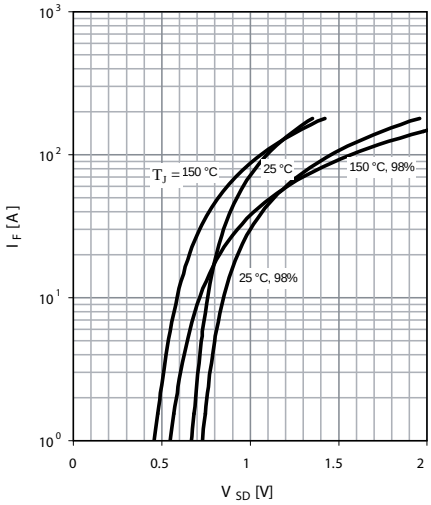


Fig. 7 Forward characteristic of reverse diode

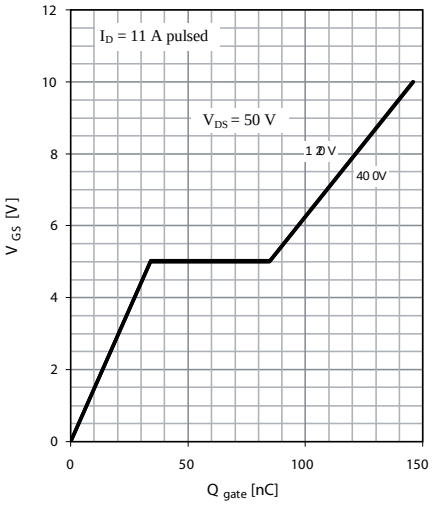


Fig. 8 Typ. gate charge

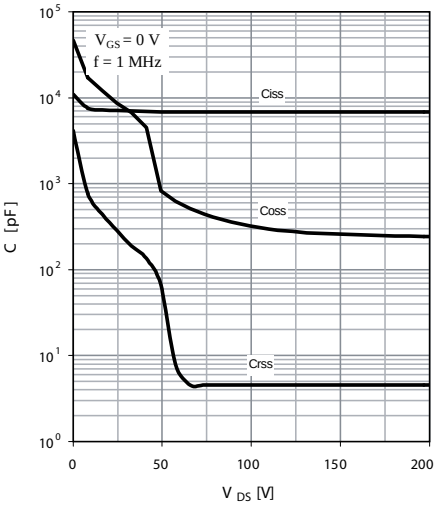


Fig. 9 Typ. capacitances

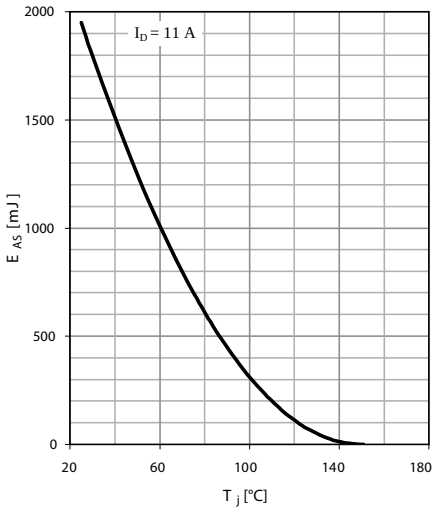


Fig. 10 Avalanche energy

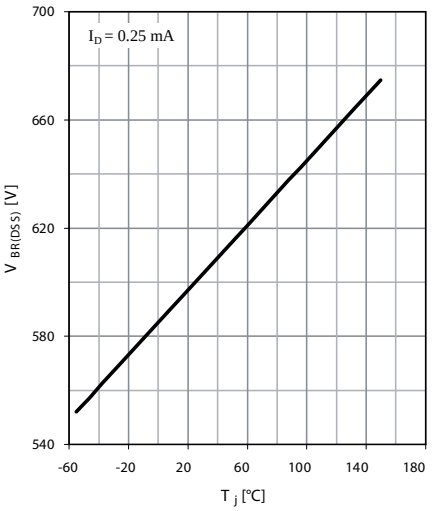


Fig. 11 Drain-source breakdown voltage

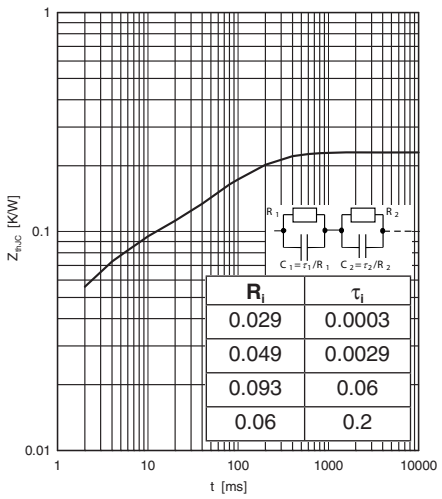


Fig. 12 Max. transient thermal impedance

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