

Final datasheet
英飞凌 CoolSiC™ 1400 V SiC MOSFET G2：采用 .XT 互连技术的碳化硅 MOSFET

特性

- $T_{vj} = 25^{\circ}\text{C}$ 时 $V_{DSS} = 1400\text{ V}$
- $T_C = 100^{\circ}\text{C}$ 时 $I_{DDC} = 50\text{ A}$
- $R_{DS(on)} = 29\text{ m}\Omega$ ($V_{GS} = 18\text{ V}$, $T_{vj} = 25^{\circ}\text{C}$ 时)
- 开关损耗非常低
- 封装背面可在 260°C 下回流焊接达3 次
- 过载运行最高结温可达 $T_{vj} = 200^{\circ}\text{C}$
- 短路耐受时间 $2\text{ }\mu\text{s}$
- 基准栅极阈值电压, $V_{GS(th)} = 4.2\text{ V}$
- 具有抗寄生导通能力, 可应用 0 V 关断栅极电压
- 坚固的体二极管, 适用于硬换向
- .XT 互连技术, 实现行业领先的热性能
- 适用于大电流能力的宽电源引脚 (2 mm)
- 用于直接母线连接的阻性焊接引脚
- TO247PLUS 封装, 具有 10.8 mm 的高爬电距离且 $CTI \geq 600\text{ V}$
- 合适的英飞凌栅极驱动器可在 <https://www.infineon.com/gdfinder> 找到

潜在应用

- 商用、建筑和农用车辆 (CAV)
- 电动汽车充电桩
- 在线式UPS/工业UPS
- 组串式逆变器
- 储能系统 (ESS)
- 通用驱动器 (GPD)

产品验证

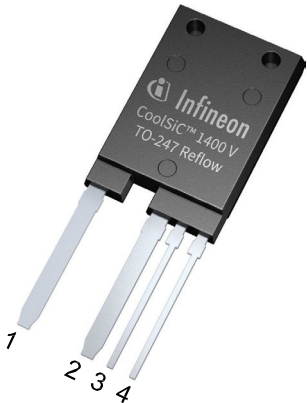
- 符合 JEDEC47/20/22 相关测试的工业应用要求

描述

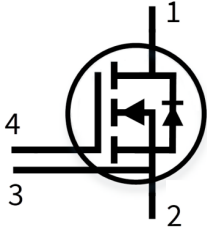
引脚定义：

- 引脚 1 – 漏极
- 引脚 2 – 源极
- 引脚 3 – 开尔文检测触点
- 引脚 4 – 栅极

注：源极引脚和检测引脚不可互换，互换可能会导致故障



- Halogen-free
- Green
- Lead-free
- RoHS



Type	Package	Marking
IMYR140R029M2H	PG-TO247-4-U08	14M2H029

本数据手册的原文使用英文撰写。为方便起见，英飞凌提供了译文；由于翻译过程中可能使用了自动化工具，英飞凌不保证译文的准确性。为确认准确性，请务必访问 [infineon.com](https://www.infineon.com) 参考最新的英文版本（控制文档）。



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1 封装

表 1 特征值

Parameter	Symbol	Note or test condition	Values			Unit
			Min.	Typ.	Max.	
Storage temperature	T_{stg}		-55		150	°C
Soldering temperature	T_{sold}	Wave soldering 1.6 mm (0.063 in.) from case for 10 s			260	°C
		Reflow soldering (MSL2 according to JEDEC J-STD-020)			260	
Thermal resistance, junction-ambient	$R_{th(j-a)}$				62	K/W
MOSFET/body diode thermal resistance, junction-case	$R_{th(j-c)}$			0.4	0.52	K/W
Comparative Tracking Index	CTI	IEC 60112 (material group 1 according to IEC 60664-1)	600			V

2 MOSFET

表 2 最大额定值

Parameter	Symbol	Note or test condition		Values	Unit
Drain-source voltage	V_{DS}	$T_{vj} \geq 25\text{ °C}$		1400	V
Continuous DC drain current for $R_{th(j-c,max)}$, limited by $T_{vj(max)}$	I_{DDC}	$V_{GS} = 18\text{ V}$	$T_c = 25\text{ °C}$	71	A
			$T_c = 100\text{ °C}$	50	
Peak drain current, t_p limited by $T_{vj(max)}$ 1)	I_{DM}	$V_{GS} = 18\text{ V}$		225	A
Gate-source voltage, max. transient voltage	V_{GS}	$t_p \leq 0.5\text{ }\mu\text{s}$, $D < 0.01$		-10...25	V
Gate-source voltage, max. static voltage 2)	V_{GS}			-7...23	V
Avalanche energy, single pulse	E_{AS}	$I_D = 27.3\text{ A}$, $V_{DD} = 50\text{ V}$, $L = 0.9\text{ mH}$, $T_{vj(start)} = 25\text{ °C}$		341	mJ
Avalanche energy, repetitive	E_{AR}	$I_D = 27.3\text{ A}$, $V_{DD} = 50\text{ V}$, $L = 4.6\text{ }\mu\text{H}$, $T_{vj(start)} = 25\text{ °C}$		1.7	mJ
Short-circuit withstand time	t_{SC}	$V_{DD} \leq 800\text{ V}$, $V_{DS,peak} < 1400\text{ V}$, $V_{GS(on)} = 15\text{ V}$, $T_{vj(start)} = 25\text{ °C}$		2	μs
Power dissipation, limited by $T_{vj(max)}$	P_{tot}	$T_c = 25\text{ °C}$		288	W
		$T_c = 100\text{ °C}$		144	

1) 已通过设计验证

2) 应用设计中的最大栅源电压应符合IPC-9592B的规定。

表 3 推荐值

Parameter	Symbol	Note or test condition	Values	Unit
Recommended turn-on gate voltage	$V_{GS(on)}$		15...18	V
Recommended turn-off gate voltage	$V_{GS(off)}$		-5...0	V

表 4 特征值

Parameter	Symbol	Note or test condition	Values			Unit
			Min.	Typ.	Max.	
Drain-source on-state resistance	$R_{DS(on)}$	$I_D = 27.3 \text{ A}$		$T_{vj} = 25^\circ\text{C}$, $V_{GS(on)} = 18 \text{ V}$	29	mΩ
				$T_{vj} = 150^\circ\text{C}$, $V_{GS(on)} = 18 \text{ V}$	60.9	
				$T_{vj} = 175^\circ\text{C}$, $V_{GS(on)} = 18 \text{ V}$	71	
				$T_{vj} = 25^\circ\text{C}$, $V_{GS(on)} = 15 \text{ V}$	35	
Gate-source threshold voltage	$V_{GS(th)}$	$I_D = 8.6 \text{ mA}$, $V_{DS} = V_{GS}$ (tested after 1 ms pulse at $V_{GS} = 20 \text{ V}$)		$T_{vj} = 25^\circ\text{C}$	3.5	V
				$T_{vj} = 175^\circ\text{C}$	4.2	
Zero gate-voltage drain current	I_{DSS}	$V_{DS} = 1400 \text{ V}$, $V_{GS} = 0 \text{ V}$		$T_{vj} = 25^\circ\text{C}$	200	μA
				$T_{vj} = 175^\circ\text{C}$	3.5	
Gate leakage current	I_{GSS}	$V_{DS} = 0 \text{ V}$		$V_{GS} = 23 \text{ V}$	120	nA
				$V_{GS} = -10 \text{ V}$	-120	
Forward transconductance	g_{fs}	$I_D = 27.3 \text{ A}$, $V_{DS} = 20 \text{ V}$		19		S
Internal gate resistance	$R_{G,int}$	$f = 1 \text{ MHz}$, $V_{AC} = 25 \text{ mV}$		2.6		Ω
Input capacitance	C_{iss}	$V_{DS} = 1000 \text{ V}$, $V_{GS} = 0 \text{ V}$, $f = 100 \text{ kHz}$, $V_{AC} = 25 \text{ mV}$		1960		pF
Output capacitance	C_{oss}	$V_{DS} = 1000 \text{ V}$, $V_{GS} = 0 \text{ V}$, $f = 100 \text{ kHz}$, $V_{AC} = 25 \text{ mV}$		67		pF
Reverse transfer capacitance	C_{rss}	$V_{DS} = 1000 \text{ V}$, $V_{GS} = 0 \text{ V}$, $f = 100 \text{ kHz}$, $V_{AC} = 25 \text{ mV}$		6		pF
C_{oss} stored energy	E_{oss}	Calculated based on $C_{oss} = f(V_{DD})$		42		μJ
Output charge	Q_{oss}	Calculated based on $C_{oss} = f(V_{DD})$		116		nC
Effective output capacitance, energy related	$C_{o(er)}$	$V_{DS} = 0...1000 \text{ V}$, $V_{GS} = 0 \text{ V}$, Calculated based on E_{oss}		131		pF
Effective output capacitance, time related	$C_{o(tr)}$	$I_D = \text{constant}$, $V_{DS} = 0...1000 \text{ V}$, $V_{GS} = 0 \text{ V}$, Calculated based on Q_{oss}		145		pF

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表 4 (续) 特征值

Parameter	Symbol	Note or test condition	Values			Unit
			Min.	Typ.	Max.	
Total gate charge	Q_G	$V_{DD} = 1000 \text{ V}$, $I_D = 27.3 \text{ A}$, $V_{GS} = 0/18 \text{ V}$, turn-on pulse		61		nC
Plateau gate charge	$Q_{GS(pl)}$	$V_{DD} = 1000 \text{ V}$, $I_D = 27.3 \text{ A}$, $V_{GS} = 0/18 \text{ V}$, turn-on pulse		20		nC
Gate-drain charge	Q_{GD}	$V_{DD} = 1000 \text{ V}$, $I_D = 27.3 \text{ A}$, $V_{GS} = 0/18 \text{ V}$, turn-on pulse		12		nC
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 1000 \text{ V}$, $I_D = 27.3 \text{ A}$, $V_{GS} = 0/18 \text{ V}$, $R_{G,ext} = 2.3 \text{ } \Omega$, $L_\sigma = 12 \text{ nH}$, diode: body diode at $V_{GS} = 0 \text{ V}$	$T_{vj} = 25 \text{ } ^\circ\text{C}$	7		ns
			$T_{vj} = 175 \text{ } ^\circ\text{C}$	5.9		
Rise time	t_r	$V_{DD} = 1000 \text{ V}$, $I_D = 27.3 \text{ A}$, $V_{GS} = 0/18 \text{ V}$, $R_{G,ext} = 2.3 \text{ } \Omega$, $L_\sigma = 12 \text{ nH}$, diode: body diode at $V_{GS} = 0 \text{ V}$	$T_{vj} = 25 \text{ } ^\circ\text{C}$	3.6		ns
			$T_{vj} = 175 \text{ } ^\circ\text{C}$	3.3		
Turn-off delay time	$t_{d(off)}$	$V_{DD} = 1000 \text{ V}$, $I_D = 27.3 \text{ A}$, $V_{GS} = 0/18 \text{ V}$, $R_{G,ext} = 2.3 \text{ } \Omega$, $L_\sigma = 12 \text{ nH}$, diode: body diode at $V_{GS} = 0 \text{ V}$	$T_{vj} = 25 \text{ } ^\circ\text{C}$	15.8		ns
			$T_{vj} = 175 \text{ } ^\circ\text{C}$	17.5		
Fall time	t_f	$V_{DD} = 1000 \text{ V}$, $I_D = 27.3 \text{ A}$, $V_{GS} = 0/18 \text{ V}$, $R_{G,ext} = 2.3 \text{ } \Omega$, $L_\sigma = 12 \text{ nH}$, diode: body diode at $V_{GS} = 0 \text{ V}$	$T_{vj} = 25 \text{ } ^\circ\text{C}$	6.6		ns
			$T_{vj} = 175 \text{ } ^\circ\text{C}$	7.2		
Turn-on energy	E_{on}	$V_{DD} = 1000 \text{ V}$, $I_D = 27.3 \text{ A}$, $V_{GS} = 0/18 \text{ V}$, $R_{G,ext} = 2.3 \text{ } \Omega$, $L_\sigma = 12 \text{ nH}$, diode: body diode at $V_{GS} = 0 \text{ V}$	$T_{vj} = 25 \text{ } ^\circ\text{C}$	332		μJ
			$T_{vj} = 175 \text{ } ^\circ\text{C}$	750		
Turn-off energy	E_{off}	$V_{DD} = 1000 \text{ V}$, $I_D = 27.3 \text{ A}$, $V_{GS} = 0/18 \text{ V}$, $R_{G,ext} = 2.3 \text{ } \Omega$, $L_\sigma = 12 \text{ nH}$, diode: body diode at $V_{GS} = 0 \text{ V}$	$T_{vj} = 25 \text{ } ^\circ\text{C}$	52		μJ
			$T_{vj} = 175 \text{ } ^\circ\text{C}$	71		
Total switching energy ¹⁾	E_{tot}	$V_{DD} = 1000 \text{ V}$, $I_D = 27.3 \text{ A}$, $V_{GS} = 0/18 \text{ V}$, $R_{G,ext} = 2.3 \text{ } \Omega$, $L_\sigma = 12 \text{ nH}$, diode: body diode at $V_{GS} = 0 \text{ V}$	$T_{vj} = 25 \text{ } ^\circ\text{C}$	535		μJ
			$T_{vj} = 175 \text{ } ^\circ\text{C}$	1311		

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表 4 (续) 特征值

Parameter	Symbol	Note or test condition	Values			Unit
			Min.	Typ.	Max.	
Turn-on energy at -5 V	E_{on}	$V_{DD} = 1000\text{ V}$, $I_D = 27.3\text{ A}$, $V_{GS} = -5/18\text{ V}$, $R_{G,ext} = 2.3\text{ }\Omega$, $L_\sigma = 12\text{ nH}$, diode: body diode at $V_{GS} = -5\text{ V}$	$T_{vj} = 25\text{ }^\circ\text{C}$	295		μJ
			$T_{vj} = 175\text{ }^\circ\text{C}$	782		
Turn-off energy at -5 V	E_{off}	$V_{DD} = 1000\text{ V}$, $I_D = 27.3\text{ A}$, $V_{GS} = -5/18\text{ V}$, $R_{G,ext} = 2.3\text{ }\Omega$, $L_\sigma = 12\text{ nH}$, diode: body diode at $V_{GS} = -5\text{ V}$	$T_{vj} = 25\text{ }^\circ\text{C}$	45		μJ
			$T_{vj} = 175\text{ }^\circ\text{C}$	48		
Total switching energy at -5 V ¹⁾	E_{tot}	$V_{DD} = 1000\text{ V}$, $I_D = 27.3\text{ A}$, $V_{GS} = -5/18\text{ V}$, $R_{G,ext} = 2.3\text{ }\Omega$, $L_\sigma = 12\text{ nH}$, diode: body diode at $V_{GS} = -5\text{ V}$	$T_{vj} = 25\text{ }^\circ\text{C}$	442		μJ
			$T_{vj} = 175\text{ }^\circ\text{C}$	1343		
Virtual junction temperature	T_{vj}		-55		175	$^\circ\text{C}$
Virtual junction temperature	$T_{vj(over)}$	overload, cumulative max. 100 h ²⁾			200	$^\circ\text{C}$

1) 包括 E_{fr}

2) 最多 5000 次循环。最大 ΔT 限制为 100 K。

注： 芯片技术的特征是高达 200 kV/ μs 。测量的 dV/dt 受到测量测试设置和封装的限制。

除非另有规定，特性均在 $T_{vj} = 25\text{ }^\circ\text{C}$ 的条件下测得。

3 体二极管 (MOSFET)

表 5 最大额定值

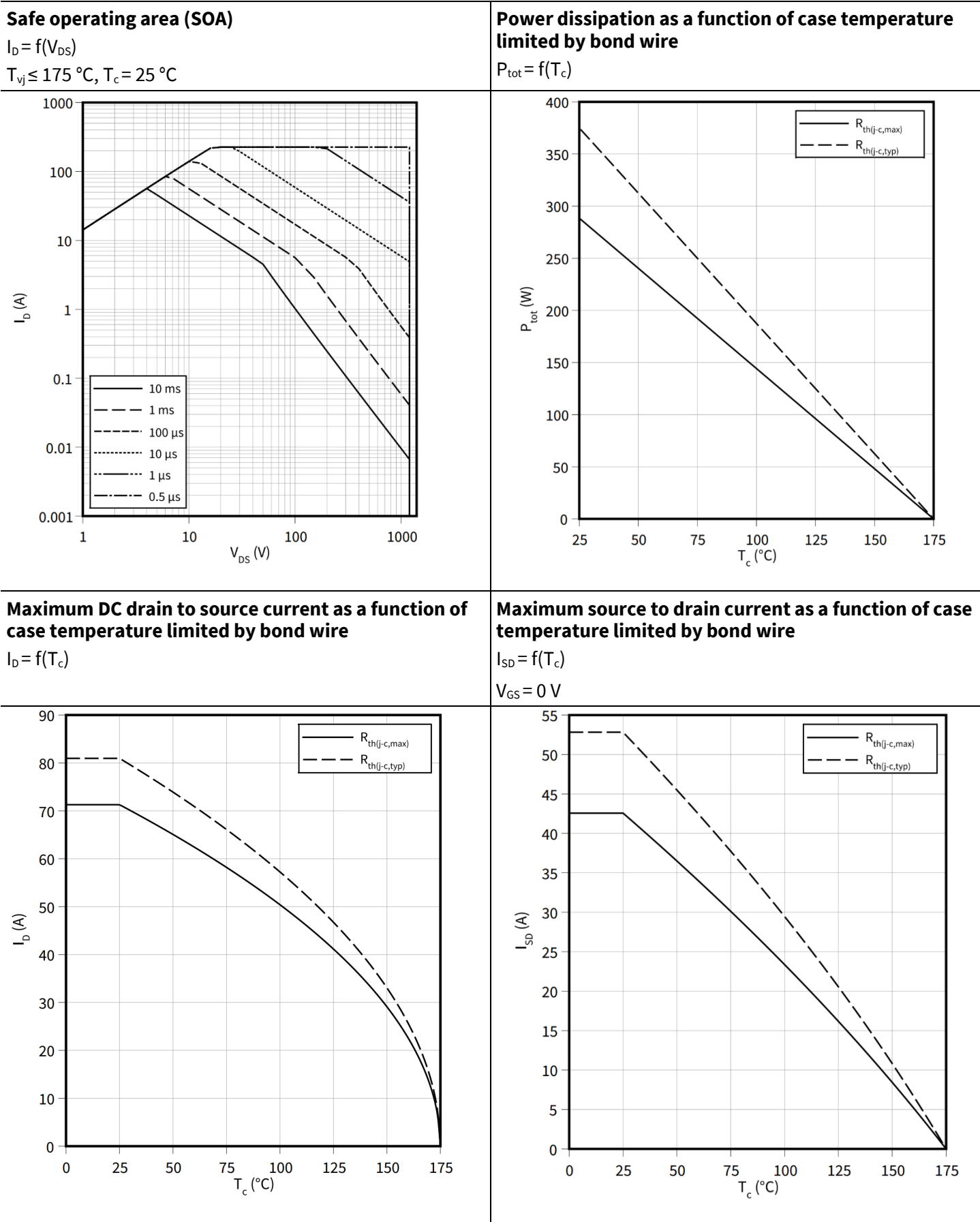
Parameter	Symbol	Note or test condition		Values	Unit
Drain-source voltage	V_{DSS}	$T_{vj} \geq 25\text{ }^\circ\text{C}$		1400	V
Continuous reverse drain current for $R_{th(j-c,max)}$, limited by $T_{vj(max)}$	I_{SDC}	$V_{GS} = 0\text{ V}$	$T_c = 25\text{ }^\circ\text{C}$	53	A
			$T_c = 100\text{ }^\circ\text{C}$	29.7	
Peak reverse drain current, t_p limited by $T_{vj(max)}$	I_{SM}	$V_{GS} = 0\text{ V}$		150	A

表 6 特征值

Parameter	Symbol	Note or test condition	Values			Unit
			Min.	Typ.	Max.	
Drain-source reverse voltage	V_{SD}	$I_{SD} = 27.3 \text{ A}$, $V_{GS} = 0 \text{ V}$	$T_{vj} = 25 \text{ }^{\circ}\text{C}$	4.2	5.5	V
			$T_{vj} = 100 \text{ }^{\circ}\text{C}$	4.11		
			$T_{vj} = 175 \text{ }^{\circ}\text{C}$	4.05		
MOSFET forward recovery charge	Q_{fr}	$V_{DD} = 1000 \text{ V}$, $I_{SD} = 27.3 \text{ A}$, $V_{GS} = 0 \text{ V}$, $R_{G,ext} = 2.3 \text{ } \Omega$, Q_{fr} includes also Q_C	$T_{vj} = 25 \text{ }^{\circ}\text{C}$	0.25		μC
			$T_{vj} = 175 \text{ }^{\circ}\text{C}$	0.94		
MOSFET peak forward recovery current	I_{frm}	$V_{DD} = 1000 \text{ V}$, $I_{SD} = 27.3 \text{ A}$, $V_{GS} = 0 \text{ V}$, $R_{G,ext} = 2.3 \text{ } \Omega$, Q_{fr} includes also Q_C	$T_{vj} = 25 \text{ }^{\circ}\text{C}$	47		A
			$T_{vj} = 175 \text{ }^{\circ}\text{C}$	94		
MOSFET forward recovery energy	E_{fr}	$V_{DD} = 1000 \text{ V}$, $I_{SD} = 27.3 \text{ A}$, $V_{GS} = 0 \text{ V}$, $R_{G,ext} = 2.3 \text{ } \Omega$, Q_{fr} includes also Q_C	$T_{vj} = 25 \text{ }^{\circ}\text{C}$	151		μJ
			$T_{vj} = 175 \text{ }^{\circ}\text{C}$	490		
MOSFET forward recovery energy at -5 V	E_{fr}	$V_{DD} = 1000 \text{ V}$, $I_{SD} = 27.3 \text{ A}$, $V_{GS} = -5 \text{ V}$, $R_{G,ext} = 2.3 \text{ } \Omega$, Q_{fr} includes also Q_C	$T_{vj} = 25 \text{ }^{\circ}\text{C}$	102		μJ
			$T_{vj} = 175 \text{ }^{\circ}\text{C}$	513		
Virtual junction temperature	T_{vj}		-55		175	$^{\circ}\text{C}$
Virtual junction temperature	$T_{vj(over)}$	overload, cumulative max. 100 h ¹⁾			200	$^{\circ}\text{C}$

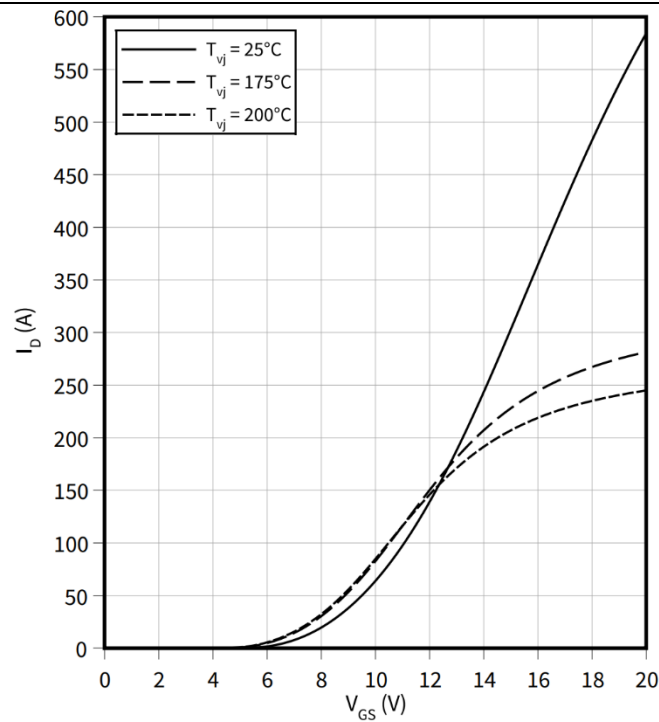
1) 最多 5000 次循环。最大 ΔT 限制为 100 K。

4 特性图



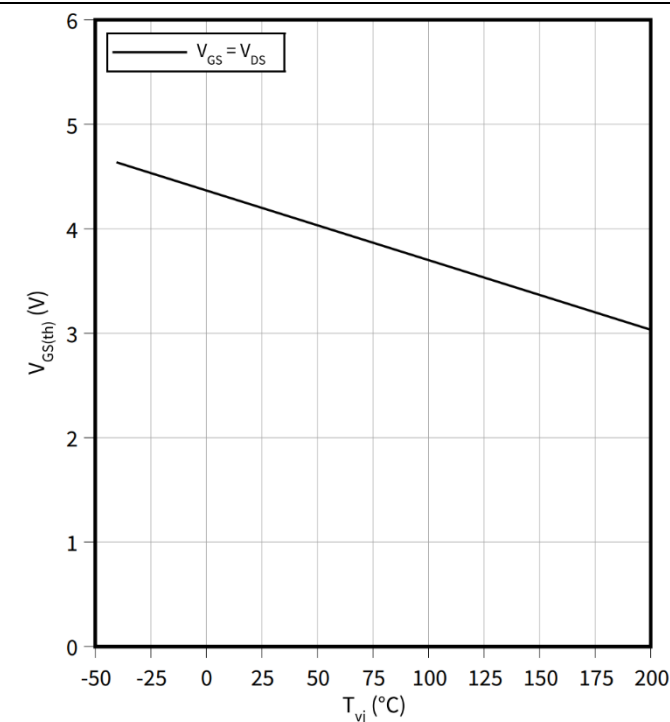
Typical transfer characteristic

$I_D = f(V_{GS})$
 $V_{DS} = 20\text{ V}$, $t_p = 20\text{ }\mu\text{s}$



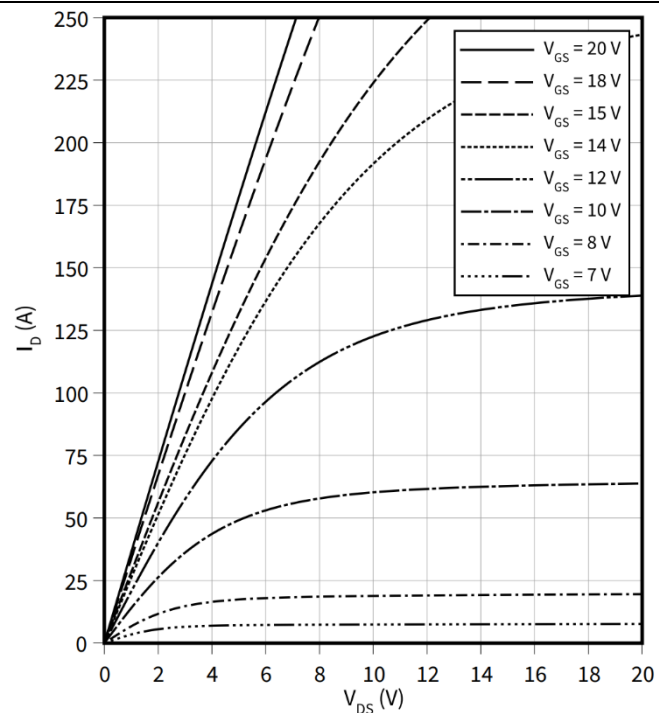
Typical gate-source threshold voltage as a function of junction temperature

$V_{GS(th)} = f(T_{vj})$
 $I_D = 8.6\text{ mA}$



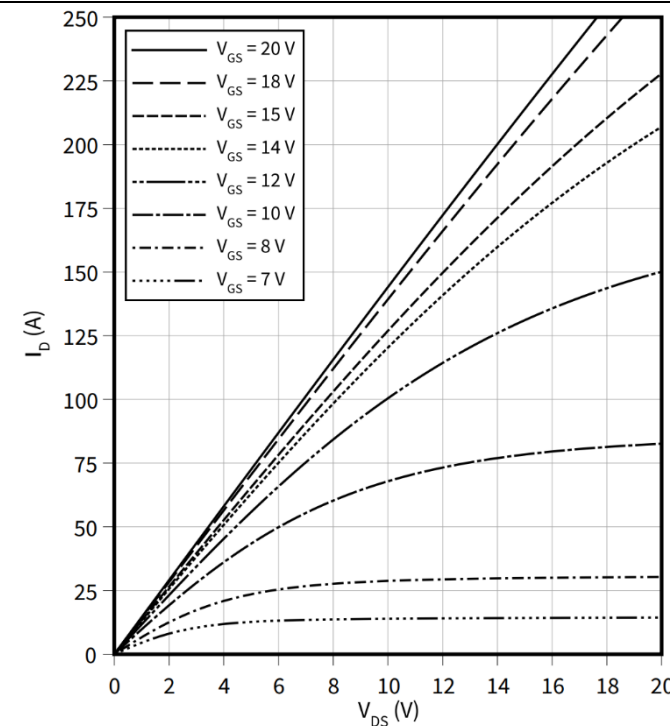
Typical output characteristic, V_{GS} as a parameter

$I_D = f(V_{DS})$
 $T_{vj} = 25\text{ }^\circ\text{C}$, $t_p = 20\text{ }\mu\text{s}$



Typical output characteristic, V_{GS} as a parameter

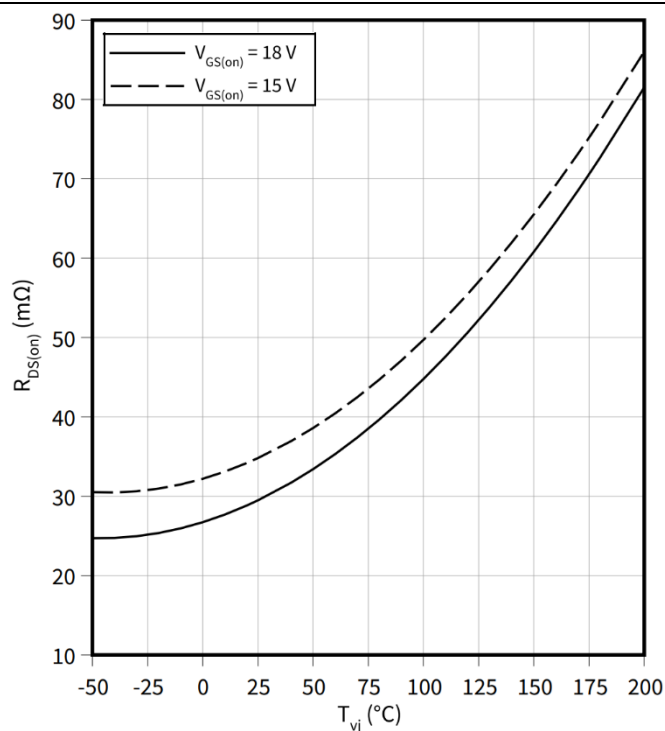
$I_D = f(V_{DS})$
 $T_{vj} = 175\text{ }^\circ\text{C}$, $t_p = 20\text{ }\mu\text{s}$



Typical on-state resistance as a function of junction temperature

$$R_{DS(on)} = f(T_{vj})$$

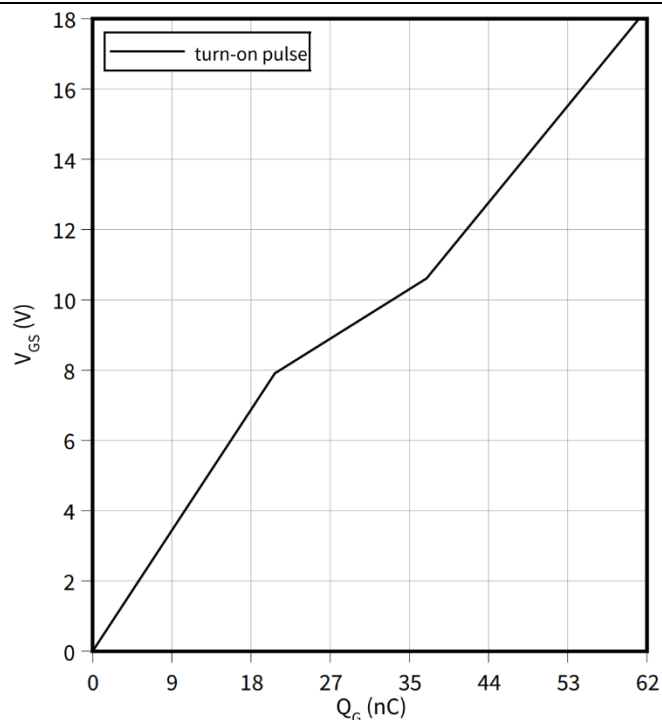
$I_D = 27.3 \text{ A}$



Typical gate charge

$$V_{GS} = f(Q_G)$$

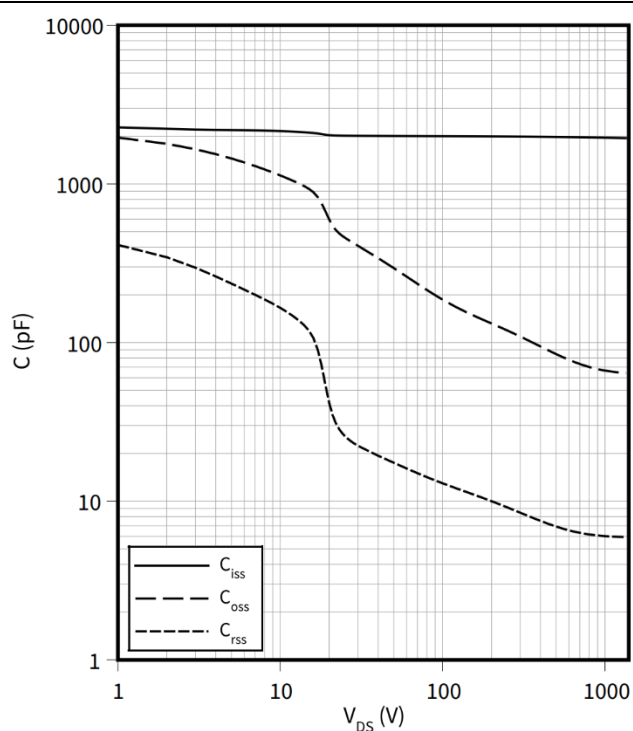
$I_D = 27.3 \text{ A}, V_{DS} = 1000 \text{ V}$



Typical capacitance as a function of drain-source voltage

$$C = f(V_{DS})$$

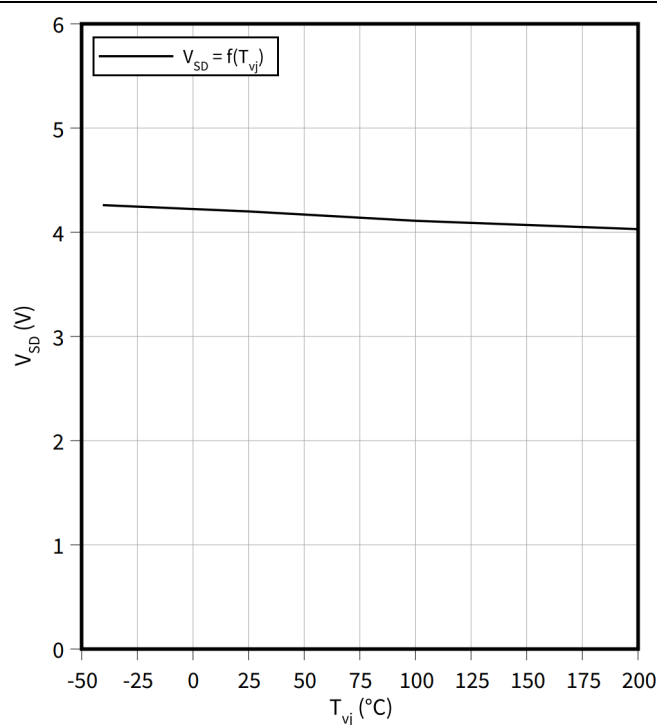
$f = 100 \text{ kHz}, V_{GS} = 0 \text{ V}$



Typical reverse drain voltage as a function of junction temperature

$$V_{SD} = f(T_{vj})$$

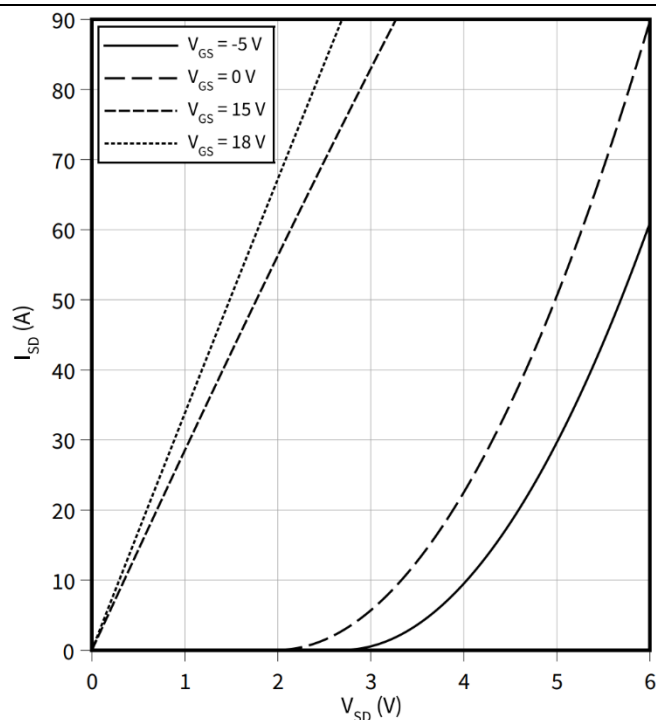
$V_{GS} = 0 \text{ V}, I_{SD} = 27.3 \text{ A}$



Typical reverse drain current as a function of reverse drain voltage, V_{GS} as a parameter

$$I_{SD} = f(V_{SD})$$

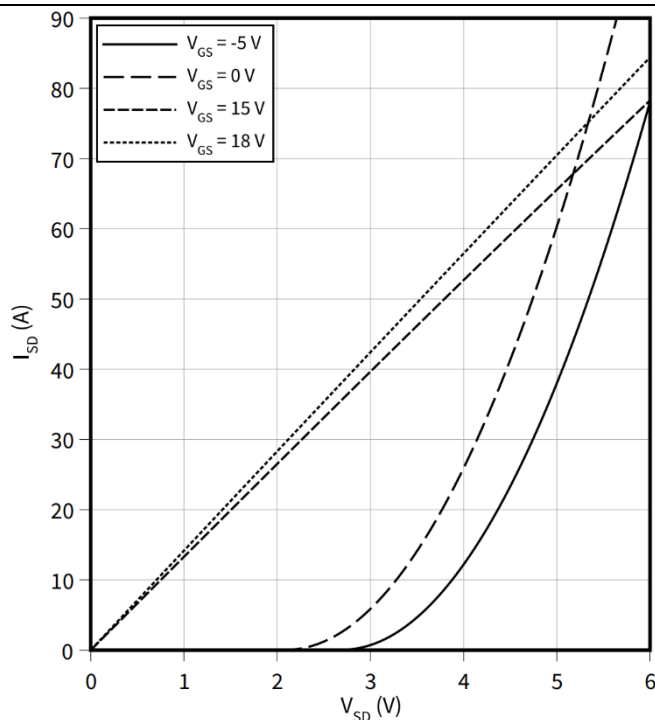
$T_{vj} = 25\text{ °C}$, $t_p = 20\text{ }\mu\text{s}$



Typical reverse drain current as a function of reverse drain voltage, V_{GS} as a parameter

$$I_{SD} = f(V_{SD})$$

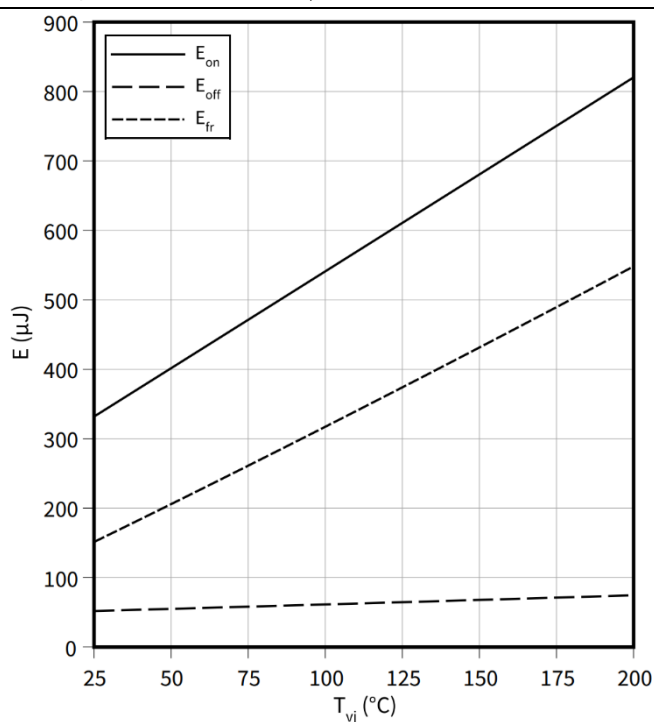
$T_{vj} = 175\text{ °C}$, $t_p = 20\text{ }\mu\text{s}$



Typical switching energy as a function of junction temperature, test circuit in Fig. F, 2nd device own body diode: $V_{GS} = 0\text{ V}$

$$E = f(T_{vj})$$

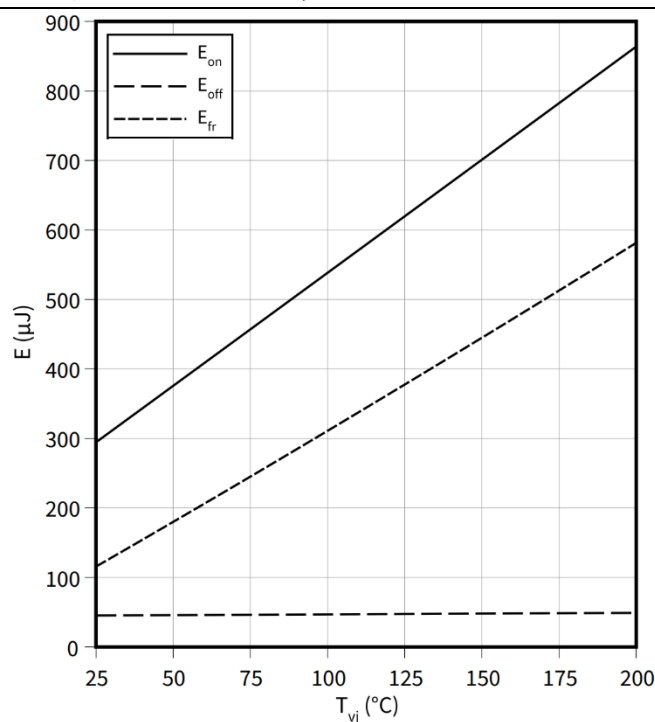
$V_{GS} = 0/18\text{ V}$, $I_D = 27.3\text{ A}$, $R_{G,ext} = 2.3\text{ }\Omega$, $V_{DD} = 1000\text{ V}$



Typical switching energy as a function of junction temperature, test circuit in Fig. F, 2nd device own body diode: $V_{GS} = -5\text{ V}$

$$E = f(T_{vj})$$

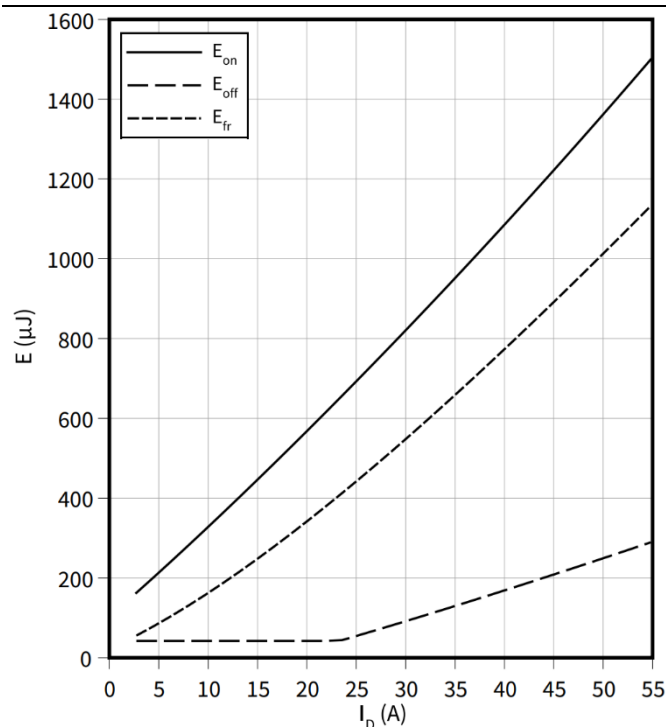
$V_{GS} = -5/18\text{ V}$, $I_D = 27.3\text{ A}$, $R_{G,ext} = 2.3\text{ }\Omega$, $V_{DD} = 1000\text{ V}$



Typical switching energy as a function of drain current, test circuit in Fig. F, 2nd device own body diode: $V_{GS} = 0$ V

$$E = f(I_D)$$

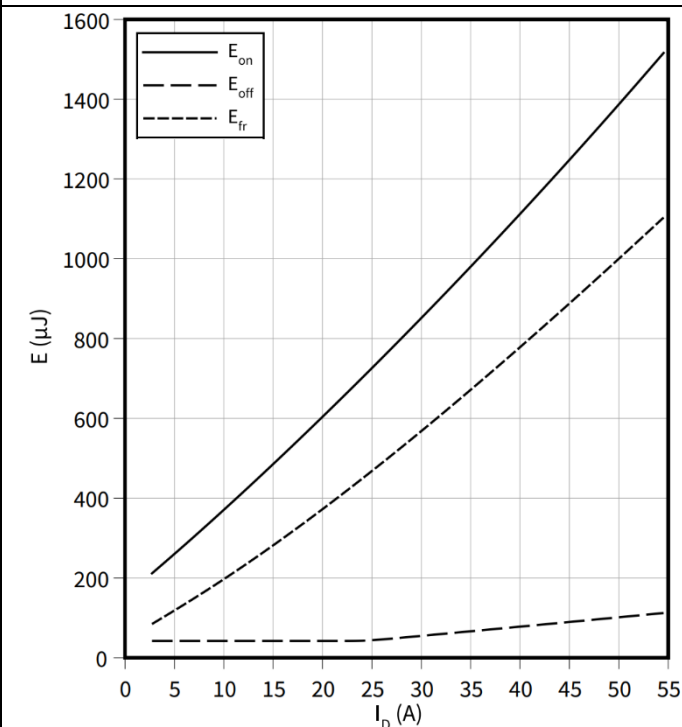
$V_{GS} = 0/18$ V, $T_{vj} = 175$ °C, $R_{G,ext} = 2.3$ Ω , $V_{DD} = 1000$ V



Typical switching energy as a function of drain current, test circuit in Fig. F, 2nd device own body diode: $V_{GS} = -5$ V

$$E = f(I_D)$$

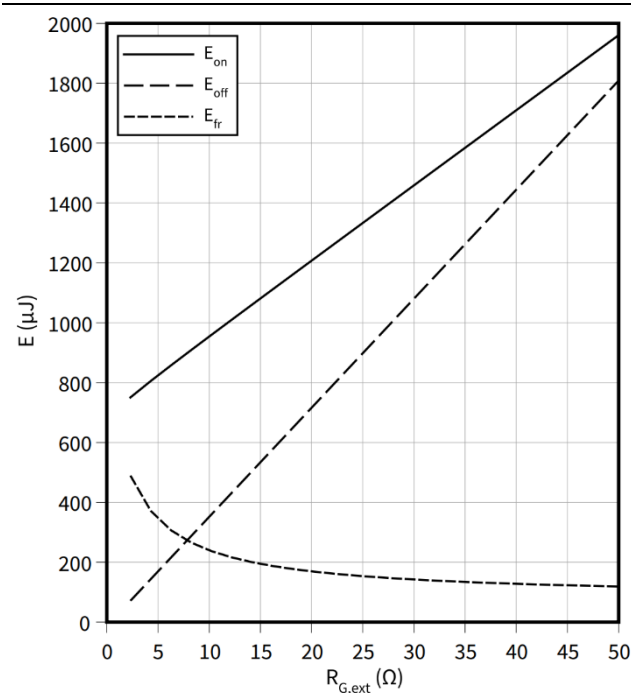
$V_{GS} = -5/18$ V, $T_{vj} = 175$ °C, $R_{G,ext} = 2.3$ Ω , $V_{DD} = 1000$ V



Typical switching energy as a function of gate resistance, test circuit in Fig. F, 2nd device own body diode: $V_{GS} = 0$ V

$$E = f(R_{G,ext})$$

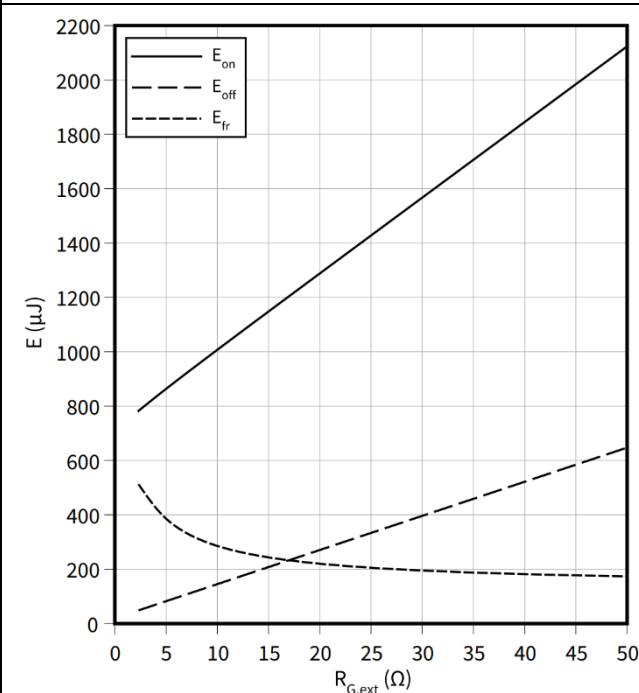
$V_{GS} = 0/18$ V, $I_D = 27.3$ A, $T_{vj} = 175$ °C, $V_{DD} = 1000$ V



Typical switching energy as a function of gate resistance, test circuit in Fig. F, 2nd device own body diode: $V_{GS} = -5$ V

$$E = f(R_{G,ext})$$

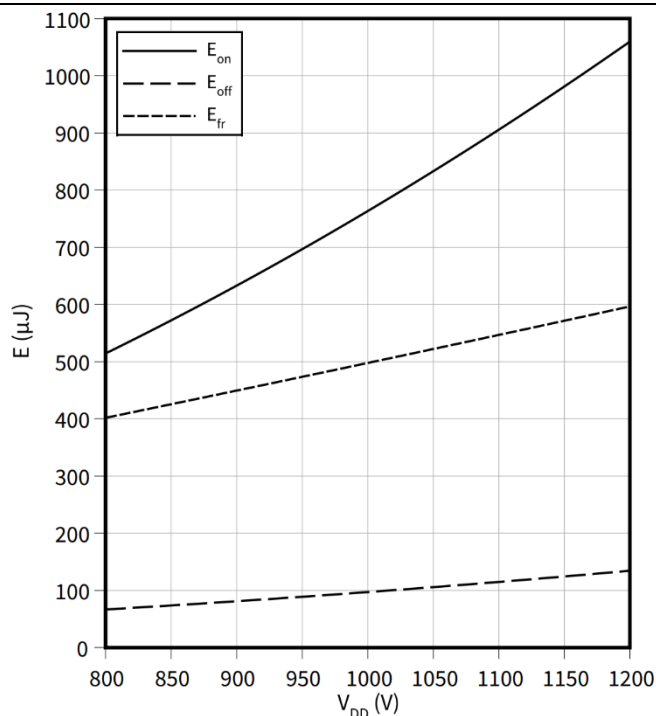
$V_{GS} = -5/18$ V, $I_D = 27.3$ A, $T_{vj} = 175$ °C, $V_{DD} = 1000$ V



Typical switching energy as a function of DC link voltage, test circuit in Fig. F, 2nd device own body diode: $V_{GS} = 0$ V

$$E = f(V_{DD})$$

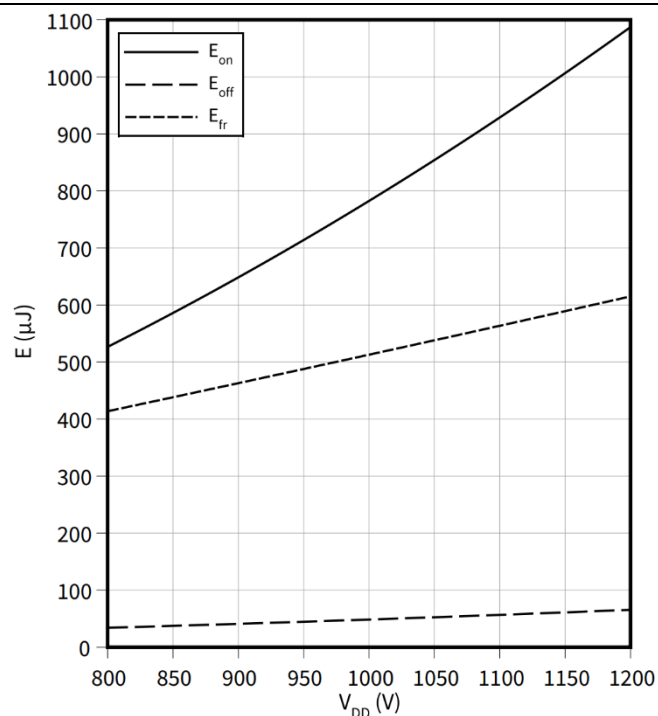
$V_{GS} = 0/18$ V, $I_D = 27.3$ A, $T_{vj} = 175$ °C, $R_{G,ext} = 2.3$ Ω



Typical switching energy as a function of DC link voltage, test circuit in Fig. F, 2nd device own body diode: $V_{GS} = -5$ V

$$E = f(V_{DD})$$

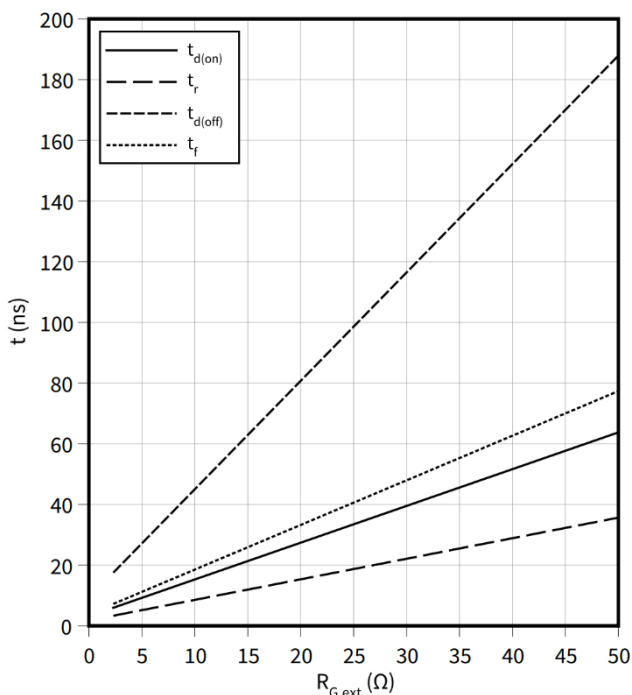
$V_{GS} = -5/18$ V, $I_D = 27.3$ A, $T_{vj} = 175$ °C, $R_{G,ext} = 2.3$ Ω



Typical switching times as a function of gate resistance, test circuit in Fig. F, 2nd device own body diode: $V_{GS} = 0$ V

$$t = f(R_{G,ext})$$

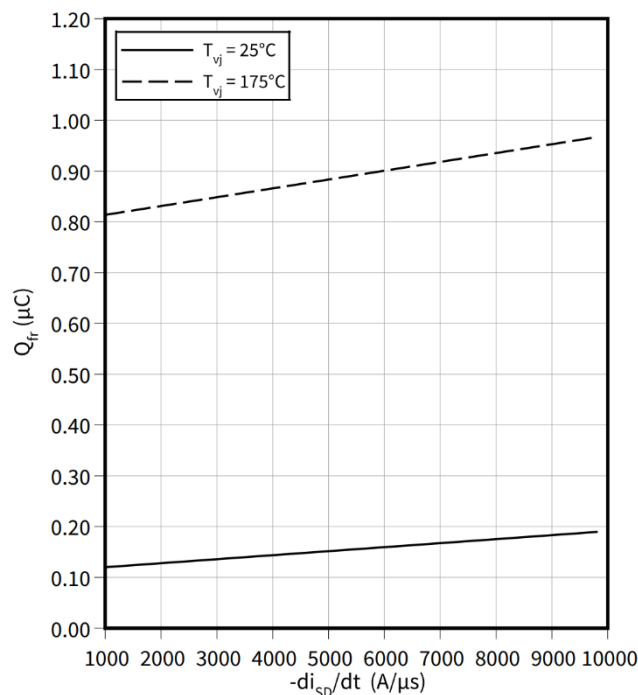
$V_{GS} = 0/18$ V, $I_D = 27.3$ A, $T_{vj} = 175$ °C, $V_{DD} = 1000$ V



Typical reverse recovery charge as a function of reverse drain current slope, test circuit in Fig. F, 2nd device own body diode: $V_{GS} = 0$ V

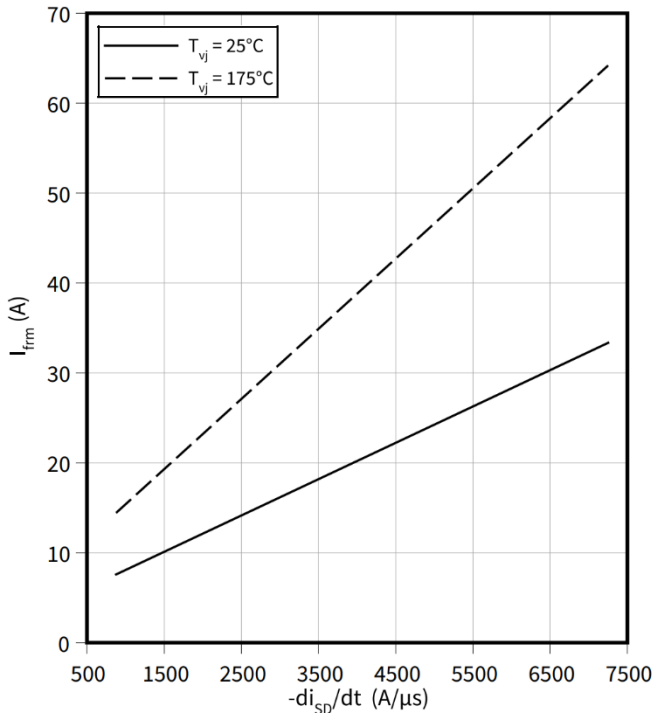
$$Q_{rr} = f(-di_{SD}/dt)$$

$V_{GS} = 0/18$ V, $I_{SD} = 27.3$ A, $V_{DD} = 1000$ V



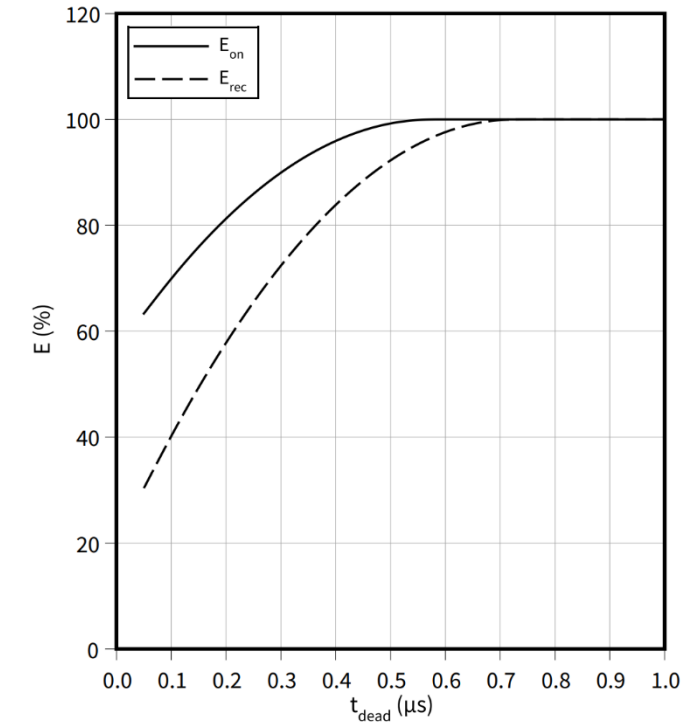
Typical reverse recovery current as a function of reverse drain current slope, test circuit in Fig. F, 2nd device own body diode: $V_{GS} = 0\text{ V}$

$I_{rrm} = f(-di_{SD}/dt)$
 $V_{GS} = 0/18\text{ V}$, $I_{SD} = 27.3\text{ A}$, $V_{DD} = 1000\text{ V}$



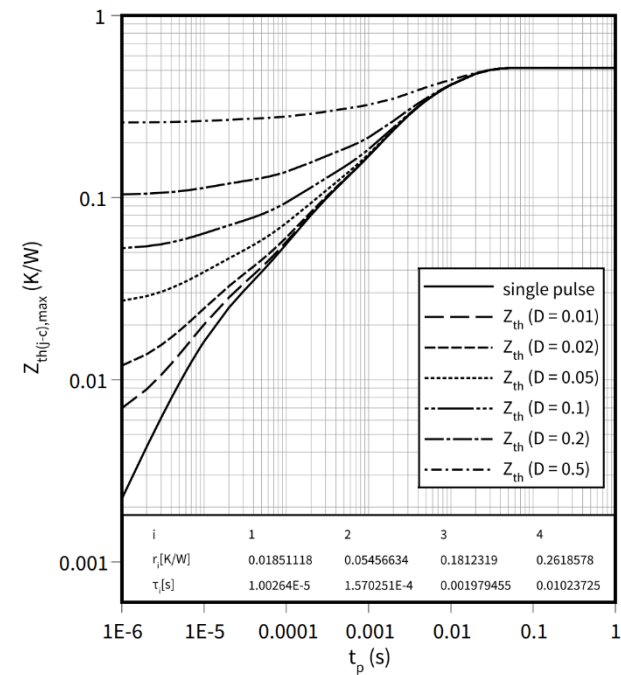
Typical switching energy as a function of dead time / blanking time, test circuit in Fig. F, 2nd device own body diode: $V_{GS} = -5\text{ V}$

$E = f(t_{dead})$
 $V_{GS} = 0/18\text{ V}$, $I_D = 27.3\text{ A}$, $T_{vj} = 175\text{ °C}$, $R_{G,ext} = 2.3\text{ }\Omega$ $V_{DD} = 1000\text{ V}$



Max. transient thermal impedance (MOSFET/diode)

$Z_{th(j-c),max} = f(t_p)$
 $D = t_p/T$



5 封装外形

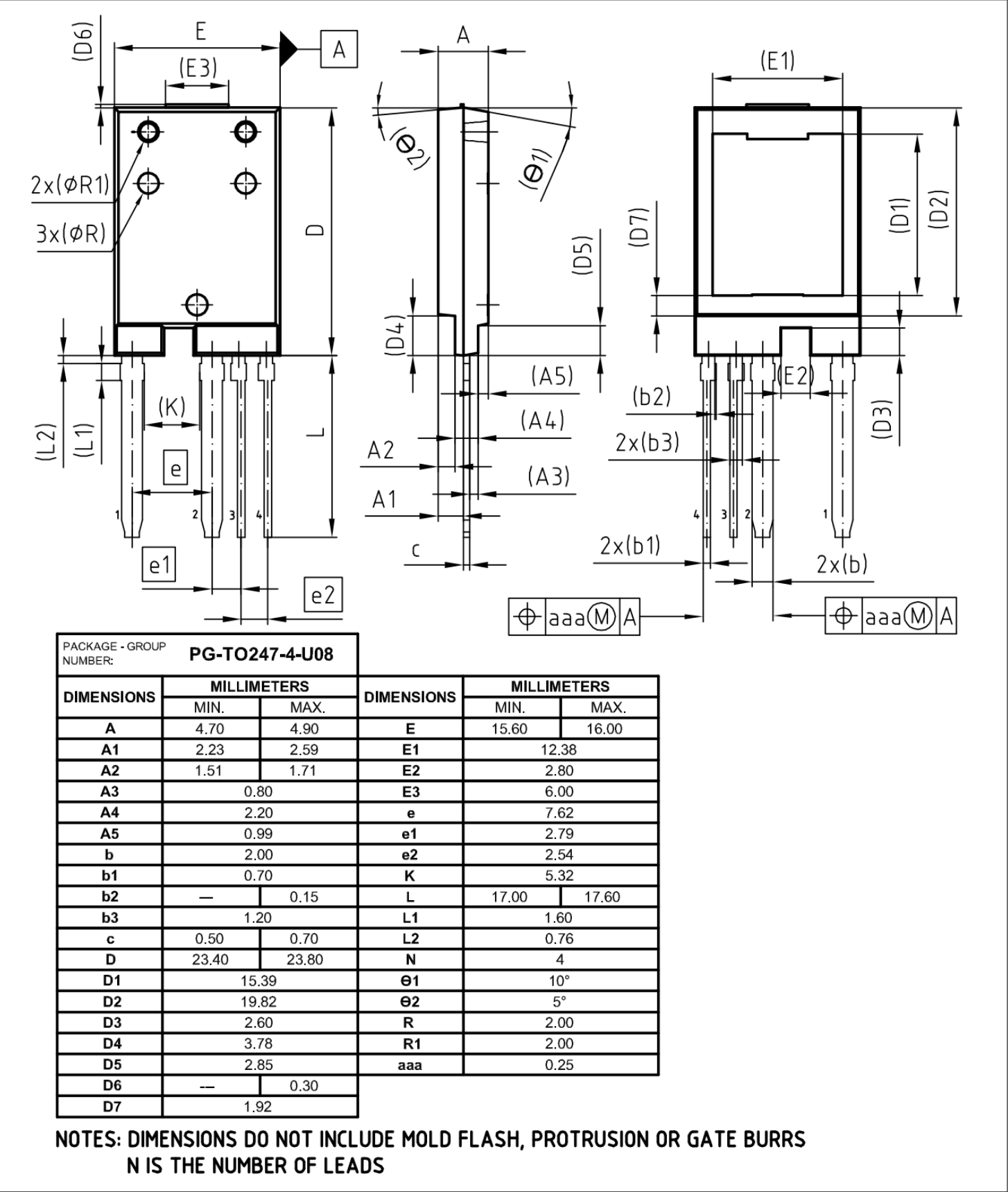


图 1

6 测试条件

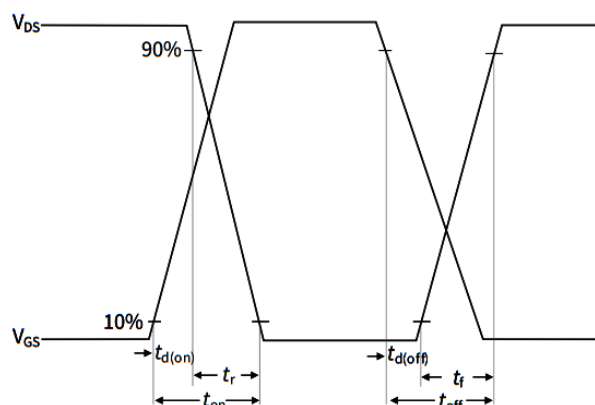


Figure A. Definition of switching times

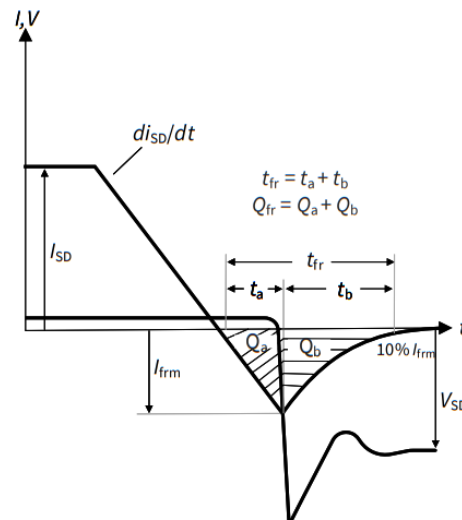


Figure B. Definition of body diode switching characteristics

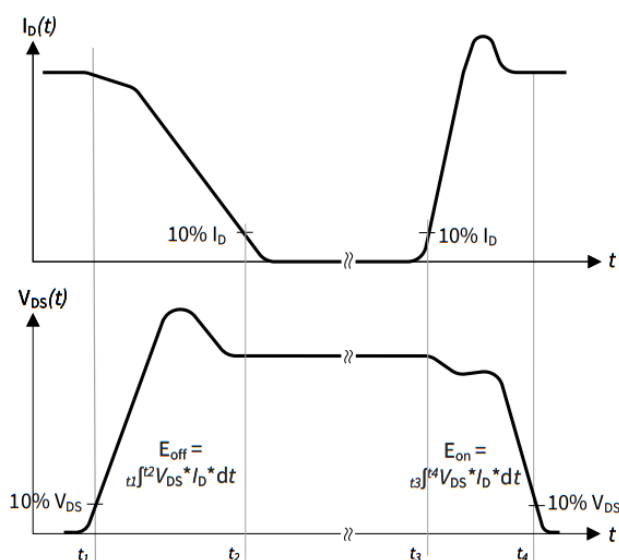


Figure C. Definition of switching losses

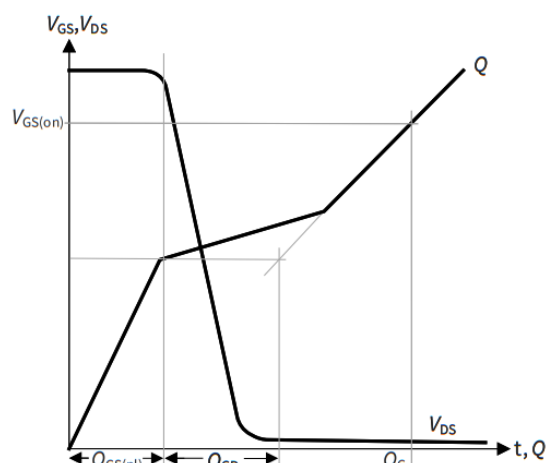


Figure D. Definition of QGD

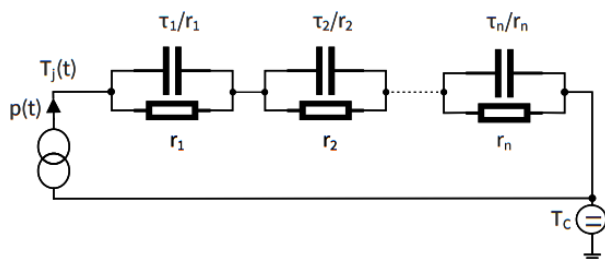


Figure E. Thermal equivalent circuit

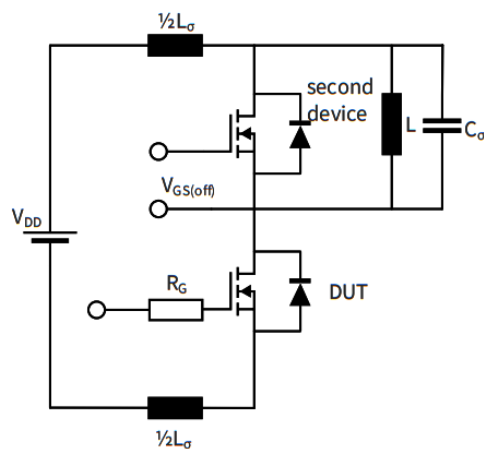


Figure F. Dynamic test circuit
Parasitic inductance L_σ ,
Parasitic capacitor C_σ



修订记录

Document revision	Date of release	Description of changes
1.00	2025-02-27	Final datasheet
1.10	2025-10-13	Added note for CTI information in Table 1 Increased I_{DM} in Table 2 Added switching information for $V_{GS} = -5/18\text{ V}$ in Table 4 and 6 and corresponding diagrams Added I_{SDC} in Table 5 Corrected test conditions and adapt values of the body diode in Table 6 Added SOA diagram on page 8 Added diagram $E = f(V_{DD}) @ V_{GS} = 0/18\text{ V}$ Added diagram $E = f(V_{DD}) @ V_{GS} = -5/18\text{ V}$ Editorial changes

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