

英飞凌 IMZC120R053M2H

CoolSiC™ 1200 V SiC MOSFET G2

采用 .XT 互连技术的碳化硅 MOSFET

特性

- $V_{DS} = 1200\text{ V}$ 时 $T_{vj} = 25^\circ\text{C}$
- $I_{DDC} = 27\text{ A}$ 时 $T_C = 100^\circ\text{C}$
- $R_{DS(on)} = 53\text{ m}\Omega$ 时 $V_{GS} = 18\text{ V}$, $T_{vj} = 25^\circ\text{C}$
- 开关损耗非常低
- 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
- 合适的英飞凌栅极驱动器可在 <https://www.infineon.com/gdfinder> 找到

潜在应用

- 通用驱动器 (GPD)
- 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)
- 焊接

产品验证

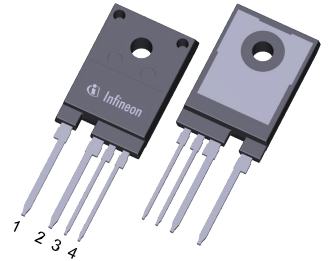
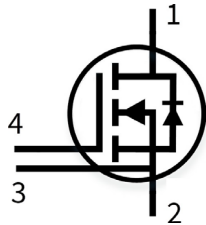
- 符合JEDEC47/20/22相关测试的工业应用要求

描述

引脚定义:

- 引脚 1 - 漏极
- 引脚 2 - 源
- 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
IMZC120R053M2H	PG-TO247-4-U07	12M2H053

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 参考最新的英文版本 (控制文档)。

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1封装

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 only allowed at leads 1.6 mm (0.063 in.) from case for 10 s			260	°C
Mounting torque	M	M3 screw, Maximum of mounting processes: 3			0.6	Nm
Thermal resistance, junction-ambient	$R_{th(j-a)}$				62	K/W
MOSFET/body diode thermal resistance, junction-case	$R_{th(j-c)}$			0.63	0.82	K/W

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表2 最大额定值

Parameter	Symbol	Note or test condition	Values	Unit	
Drain-source voltage	V_{DSS}	$T_{vj} \geq 25\text{ °C}$	1200	V	
Continuous DC drain current for $R_{th(j-c,max)}$, limited by $T_{vj(max)}$	I_{DCC}	$V_{GS} = 18\text{ V}$	$T_c = 25\text{ °C}$	38	A
			$T_c = 100\text{ °C}$	27	
Peak drain current, t_p limited by $T_{vj(max)}$ ¹⁾	I_{DM}	$V_{GS} = 18\text{ V}$	135	A	
Gate-source voltage, max. transient voltage	V_{GS}	$t_p \leq 0.5\ \mu\text{s}$, $D < 0.01$	-10...25	V	
Gate-source voltage, max. static voltage ²⁾	V_{GS}		-7...23	V	
Avalanche energy, single pulse	E_{AS}	$I_D = 13\text{ A}$, $V_{DD} = 50\text{ V}$, $L = 1.9\text{ mH}$, $T_{vj(start)} = 25\text{ °C}$	166	mJ	
Avalanche energy, repetitive	E_{AR}	$I_D = 13\text{ A}$, $V_{DD} = 50\text{ V}$, $L = 9.5\ \mu\text{H}$, $T_{vj(start)} = 25\text{ °C}$	0.83	mJ	
Short-circuit withstand time	t_{SC}	$V_{DD} \leq 800\text{ V}$, $V_{DS,peak} < 1200\text{ V}$, $V_{GS(on)} = 15\text{ V}$, $T_{vj(start)} = 25\text{ °C}$	2	μs	
Power dissipation, limited by $T_{vj(max)}$	P_{tot}		$T_c = 25\text{ °C}$	182	W
			$T_c = 100\text{ °C}$	91	

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 建议值

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	$R_{DS(on)}$	$I_D = 13\text{ A}$	$T_{vj} = 25\text{ °C}$, $V_{GS(on)} = 18\text{ V}$		53		mΩ
			$T_{vj} = 150\text{ °C}$, $V_{GS(on)} = 18\text{ V}$		107	137	
			$T_{vj} = 175\text{ °C}$, $V_{GS(on)} = 18\text{ V}$		124		
			$T_{vj} = 25\text{ °C}$, $V_{GS(on)} = 15\text{ V}$		66		
Gate-source threshold voltage	$V_{GS(th)}$	$I_D = 4.1\text{ mA}$, $V_{DS} = V_{GS}$ (tested after 1 ms pulse at $V_{GS} = 20\text{ V}$)	$T_{vj} = 25\text{ °C}$	3.5	4.2	5.1	V
			$T_{vj} = 175\text{ °C}$		3.2		
Zero gate-voltage drain current	I_{DSS}	$V_{DS} = 1200\text{ V}$, $V_{GS} = 0\text{ V}$	$T_{vj} = 25\text{ °C}$			110	μA
			$T_{vj} = 175\text{ °C}$		2		
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}	$I_D = 13\text{ A}$, $V_{DS} = 20\text{ V}$		9			S
Internal gate resistance	$R_{G,int}$	$f = 1\text{ MHz}$, $V_{AC} = 25\text{ mV}$		8.5			Ω
Input capacitance	C_{iss}	$V_{DS} = 800\text{ V}$, $V_{GS} = 0\text{ V}$, $f = 100\text{ kHz}$, $V_{AC} = 25\text{ mV}$		1010			pF
Output capacitance	C_{oss}	$V_{DS} = 800\text{ V}$, $V_{GS} = 0\text{ V}$, $f = 100\text{ kHz}$, $V_{AC} = 25\text{ mV}$		41			pF
Reverse transfer capacitance	C_{rss}	$V_{DS} = 800\text{ V}$, $V_{GS} = 0\text{ V}$, $f = 100\text{ kHz}$, $V_{AC} = 25\text{ mV}$		4			pF
C_{oss} stored energy	E_{oss}	Calculated based on $C_{oss} = f(V_{DD})$		17			μJ
Output charge	Q_{oss}	Calculated based on $C_{oss} = f(V_{DD})$		64			nC
Effective output capacitance, energy related	$C_{o(er)}$	$V_{DS} = 0...800\text{ V}$, $V_{GS} = 0\text{ V}$, Calculated based on E_{oss}		53			pF
Effective output capacitance, time related	$C_{o(tr)}$	$I_D = \text{constant}$, $V_{DS} = 0...800\text{ V}$, $V_{GS} = 0\text{ V}$, Calculated based on Q_{oss}		80			pF
Total gate charge	Q_G	$V_{DD} = 800\text{ V}$, $I_D = 13\text{ A}$, $V_{GS} = 0/18\text{ V}$, turn-on pulse		30			nC

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表 4 (续) 特征值

Parameter	Symbol	Note or test condition	Values			Unit
			Min.	Typ.	Max.	
Plateau gate charge	$Q_{GS(pl)}$	$V_{DD} = 800\text{ V}$, $I_D = 13\text{ A}$, $V_{GS} = 0/18\text{ V}$, turn-on pulse		7		nC
Gate-drain charge	Q_{GD}	$V_{DD} = 800\text{ V}$, $I_D = 13\text{ A}$, $V_{GS} = 0/18\text{ V}$, turn-on pulse		8		nC
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 800\text{ V}$, $I_D = 13\text{ A}$, $V_{GS} = 0/18\text{ V}$, $R_{G,ext} = 2.3\ \Omega$, $L_\sigma = 12\text{ nH}$, diode: body diode at $V_{GS} = 0\text{ V}$	$T_{vj} = 25\text{ }^\circ\text{C}$	7		ns
			$T_{vj} = 175\text{ }^\circ\text{C}$		5.2	
Rise time	t_r	$V_{DD} = 800\text{ V}$, $I_D = 13\text{ A}$, $V_{GS} = 0/18\text{ V}$, $R_{G,ext} = 2.3\ \Omega$, $L_\sigma = 12\text{ nH}$, diode: body diode at $V_{GS} = 0\text{ V}$	$T_{vj} = 25\text{ }^\circ\text{C}$	4.1		ns
			$T_{vj} = 175\text{ }^\circ\text{C}$		3.7	
Turn-off delay time	$t_{d(off)}$	$V_{DD} = 800\text{ V}$, $I_D = 13\text{ A}$, $V_{GS} = 0/18\text{ V}$, $R_{G,ext} = 2.3\ \Omega$, $L_\sigma = 12\text{ nH}$, diode: body diode at $V_{GS} = 0\text{ V}$	$T_{vj} = 25\text{ }^\circ\text{C}$	14.8		ns
			$T_{vj} = 175\text{ }^\circ\text{C}$		17.3	
Fall time	t_f	$V_{DD} = 800\text{ V}$, $I_D = 13\text{ A}$, $V_{GS} = 0/18\text{ V}$, $R_{G,ext} = 2.3\ \Omega$, $L_\sigma = 12\text{ nH}$, diode: body diode at $V_{GS} = 0\text{ V}$	$T_{vj} = 25\text{ }^\circ\text{C}$	6.2		ns
			$T_{vj} = 175\text{ }^\circ\text{C}$		7.3	
Turn-on energy	E_{on}	$V_{DD} = 800\text{ V}$, $I_D = 13\text{ A}$, $V_{GS} = 0/18\text{ V}$, $R_{G,ext} = 2.3\ \Omega$, $L_\sigma = 12\text{ nH}$, diode: body diode at $V_{GS} = 0\text{ V}$	$T_{vj} = 25\text{ }^\circ\text{C}$	89		μJ
			$T_{vj} = 175\text{ }^\circ\text{C}$		170	
Turn-off energy	E_{off}	$V_{DD} = 800\text{ V}$, $I_D = 13\text{ A}$, $V_{GS} = 0/18\text{ V}$, $R_{G,ext} = 2.3\ \Omega$, $L_\sigma = 12\text{ nH}$, diode: body diode at $V_{GS} = 0\text{ V}$	$T_{vj} = 25\text{ }^\circ\text{C}$	39		μJ
			$T_{vj} = 175\text{ }^\circ\text{C}$		55	
Total switching energy ¹⁾	E_{tot}	$V_{DD} = 800\text{ V}$, $I_D = 13\text{ A}$, $V_{GS} = 0/18\text{ V}$, $R_{G,ext} = 2.3\ \Omega$, $L_\sigma = 12\text{ nH}$, diode: body diode at $V_{GS} = 0\text{ V}$	$T_{vj} = 25\text{ }^\circ\text{C}$	178		μJ
			$T_{vj} = 175\text{ }^\circ\text{C}$		368	

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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}	$V_{DD} = 800\text{ V}$, $I_D = 13\text{ A}$, $V_{GS} = -5/18\text{ V}$, $R_{G,ext} = 2.3\ \Omega$, $L_\sigma = 12\text{ nH}$, diode: body diode at $V_{GS} = -5\text{ V}$	$T_{vj} = 25\text{ }^\circ\text{C}$		80	μJ
			$T_{vj} = 175\text{ }^\circ\text{C}$		161	
Turn-off energy at -5 V	E_{off}	$V_{DD} = 800\text{ V}$, $I_D = 13\text{ A}$, $V_{GS} = -5/18\text{ V}$, $R_{G,ext} = 2.3\ \Omega$, $L_\sigma = 12\text{ nH}$, diode: body diode at $V_{GS} = -5\text{ V}$	$T_{vj} = 25\text{ }^\circ\text{C}$		19	μJ
			$T_{vj} = 175\text{ }^\circ\text{C}$		21	
Total switching energy at -5 V ¹⁾	E_{tot}	$V_{DD} = 800\text{ V}$, $I_D = 13\text{ A}$, $V_{GS} = -5/18\text{ V}$, $R_{G,ext} = 2.3\ \Omega$, $L_\sigma = 12\text{ nH}$, diode: body diode at $V_{GS} = -5\text{ V}$	$T_{vj} = 25\text{ }^\circ\text{C}$		149	μJ
			$T_{vj} = 175\text{ }^\circ\text{C}$		350	
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，特性均为 $T_{vj} = 25\text{ }^\circ\text{C}$ 。

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}	$T_{vj} \geq 25\text{ }^\circ\text{C}$	1200	V	
Continuous reverse drain current for $R_{th(j-c,max)}$, limited by $T_{vj(max)}$	I_{SDC}	$V_{GS} = 0\text{ V}$	$T_c = 25\text{ }^\circ\text{C}$	32	A
			$T_c = 100\text{ }^\circ\text{C}$	18	
Peak reverse drain current, t_p limited by $T_{vj(max)}$	I_{SM}	$V_{GS} = 0\text{ V}$	81	A	

表6 特征值

Parameter	Symbol	Note or test condition	Values			Unit
			Min.	Typ.	Max.	
Drain-source reverse voltage	V_{SD}	$I_{SD} = 13 \text{ A}, V_{GS} = 0 \text{ V}$	$T_{vj} = 25 \text{ }^\circ\text{C}$	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}	$V_{DD} = 800 \text{ V}, I_{SD} = 13 \text{ A}, V_{GS} = 0 \text{ V}, R_{GS(on)} = 2.3 \text{ } \Omega, Q_{fr}$ includes also Q_C	$T_{vj} = 25 \text{ }^\circ\text{C}$	0.13		μC
			$T_{vj} = 175 \text{ }^\circ\text{C}$	0.28		
MOSFET peak forward recovery current	I_{frm}	$V_{DD} = 800 \text{ V}, I_{SD} = 13 \text{ A}, V_{GS} = 0 \text{ V}, R_{GS(on)} = 2.3 \text{ } \Omega, Q_{fr}$ includes also Q_C	$T_{vj} = 25 \text{ }^\circ\text{C}$	23.2		A
			$T_{vj} = 175 \text{ }^\circ\text{C}$	38.2		
MOSFET forward recovery energy	E_{fr}	$V_{DD} = 800 \text{ V}, I_{SD} = 13 \text{ A}, V_{GS} = 0 \text{ V}, R_{GS(on)} = 2.3 \text{ } \Omega, Q_{fr}$ includes also Q_C	$T_{vj} = 25 \text{ }^\circ\text{C}$	50		μJ
			$T_{vj} = 175 \text{ }^\circ\text{C}$	143		
MOSFET forward recovery energy at -5 V	E_{fr}	$V_{DD} = 800 \text{ V}, I_{SD} = 13 \text{ A}, V_{GS} = -5 \text{ V}, R_{GS(on)} = 2.3 \text{ } \Omega, Q_{fr}$ includes also Q_C	$T_{vj} = 25 \text{ }^\circ\text{C}$	50		μJ
			$T_{vj} = 175 \text{ }^\circ\text{C}$	168		
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。

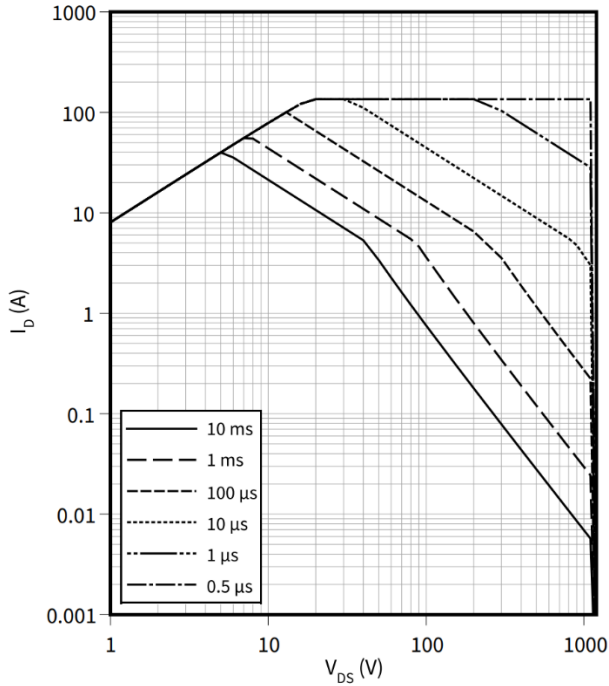
4 特性图

4 特性图

Safe operating area (SOA)

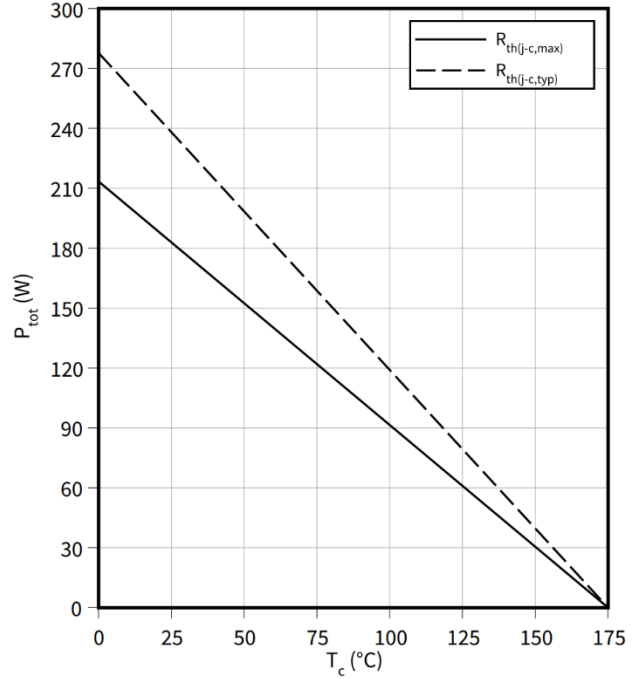
$I_D = f(V_{DS})$

$T_{vj} \leq 175\text{ }^\circ\text{C}$, $T_c = 25\text{ }^\circ\text{C}$



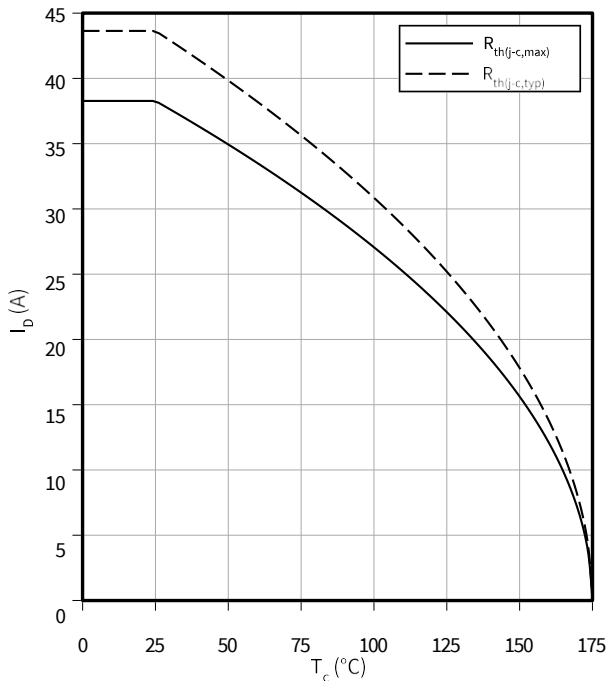
Power dissipation as a function of case temperature

$P_{tot} = f(T_c)$



Maximum DC drain to source current as a function of case temperature limited by bond wire

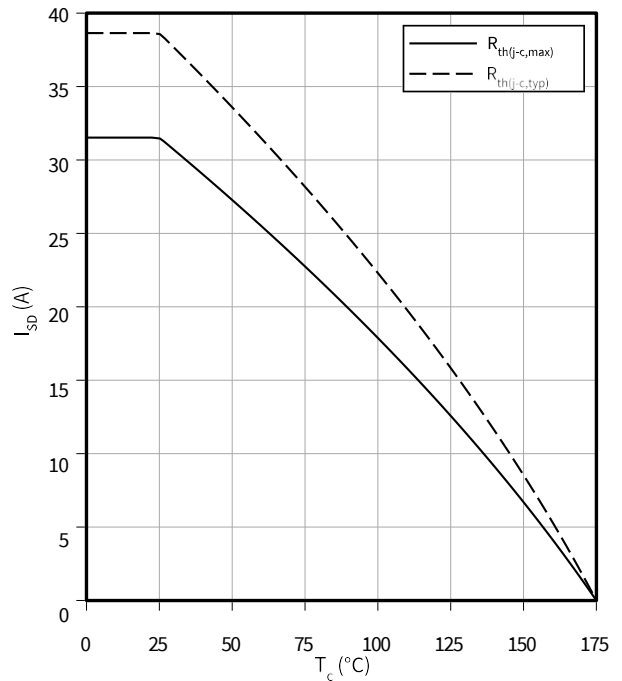
$I_D = f(T_c)$



Maximum source to drain current as a function of case temperature limited by bond wire

$I_{SD} = f(T_c)$

$V_{GS} = 0\text{ V}$

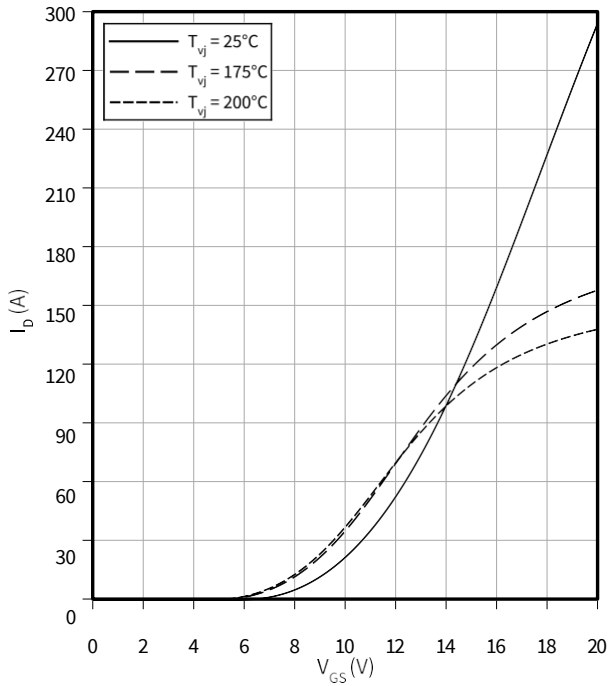


4 特性图

Typical transfer characteristic

$I_D = f(V_{GS})$

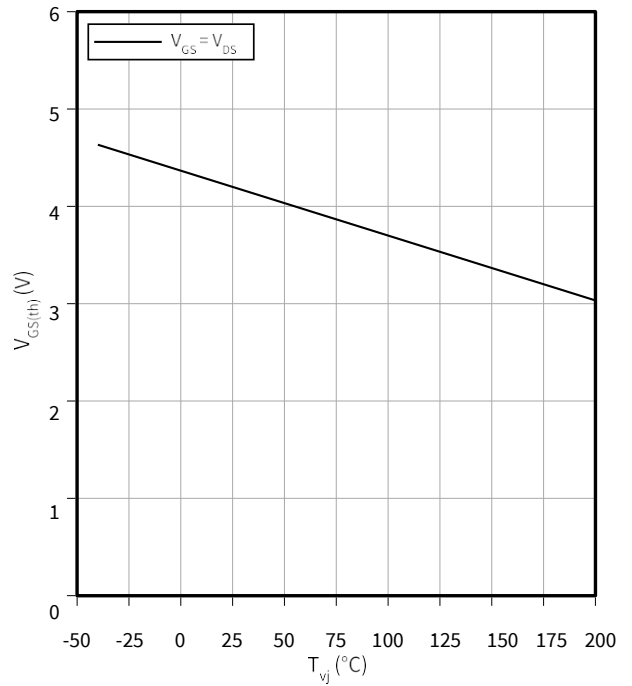
$V_{DS} = 20 \text{ V}$, $t_p = 20 \mu\text{s}$



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

$V_{GS(th)} = f(T_{vj})$

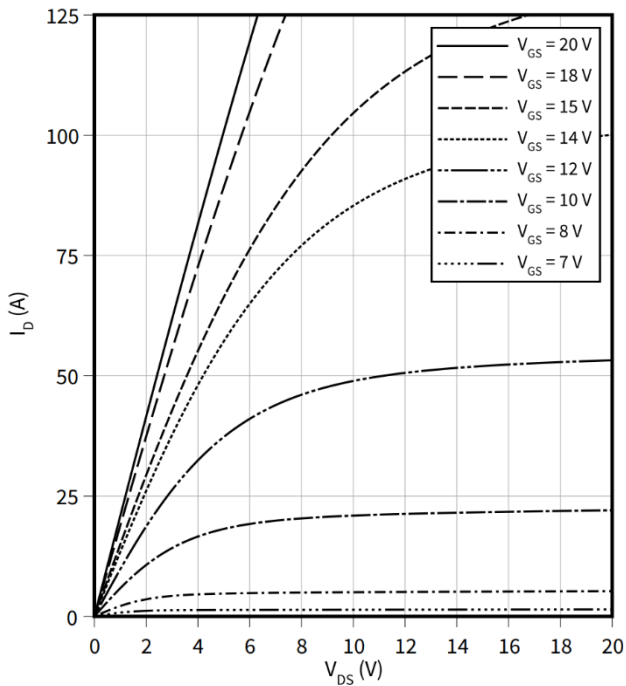
$I_D = 4.1 \text{ mA}$



Typical output characteristic, V_{GS} as a parameter

$I_D = f(V_{DS})$

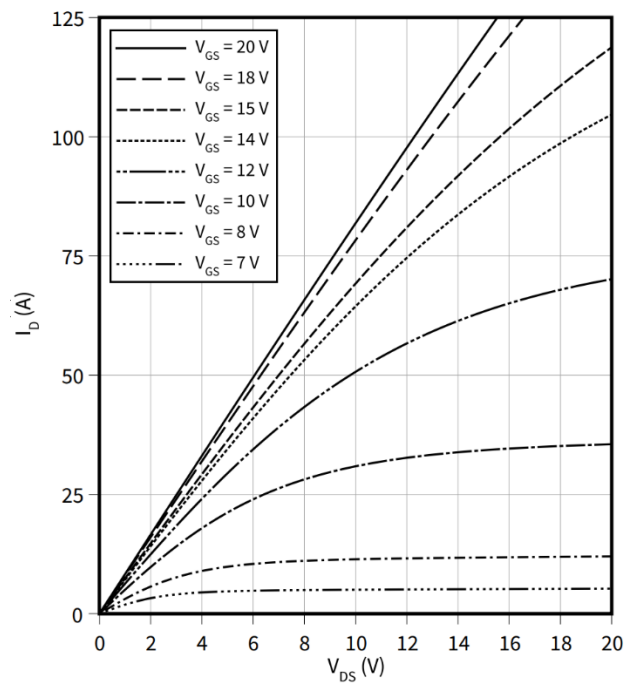
$T_{vj} = 25 \text{ }^\circ\text{C}$, $t_p = 20 \mu\text{s}$



Typical output characteristic, V_{GS} as a parameter

$I_D = f(V_{DS})$

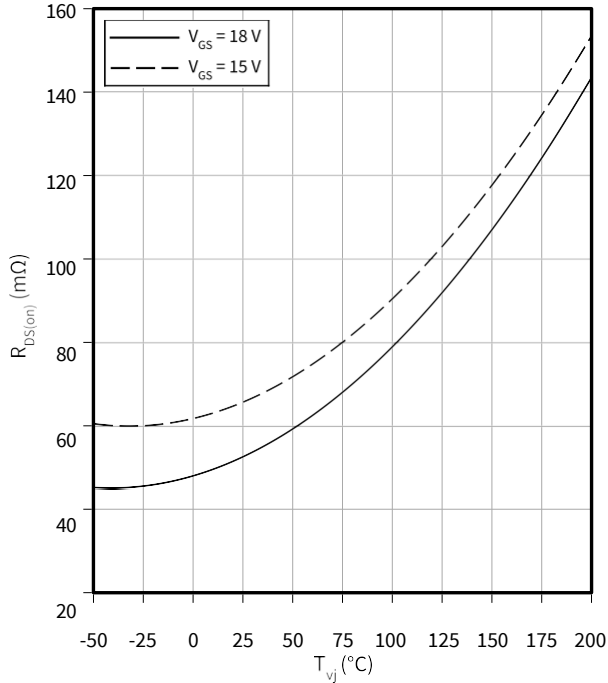
$T_{vj} = 175 \text{ }^\circ\text{C}$, $t_p = 20 \mu\text{s}$



4 特性图

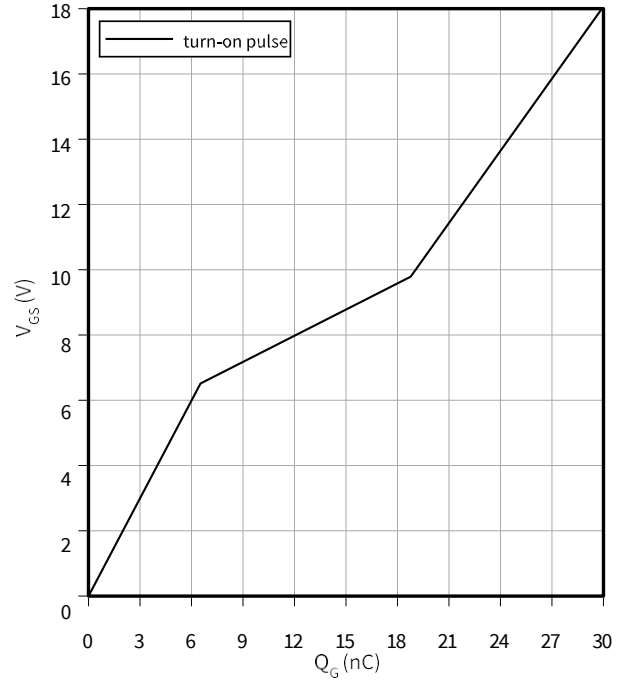
Typical on-state resistance as a function of junction temperature

$R_{DS(on)} = f(T_{vj})$
 $I_D = 13 \text{ A}$



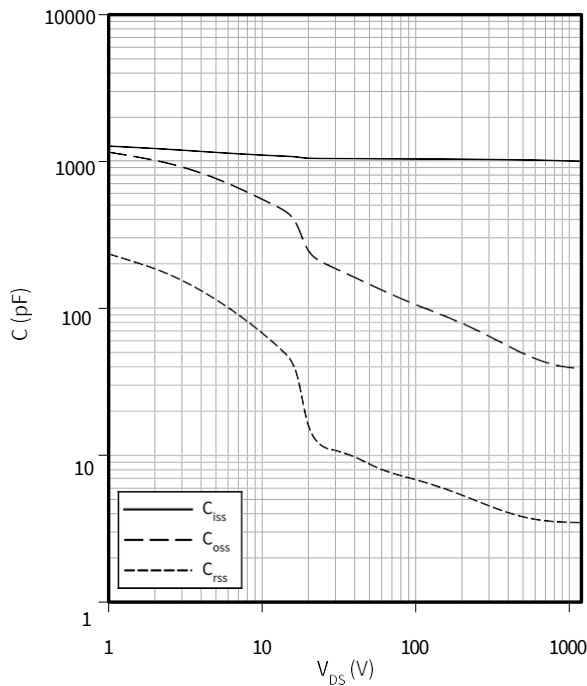
Typical gate charge

$V_{GS} = f(Q_G)$
 $I_D = 13 \text{ A}, V_{DS} = 800 \text{ V}$



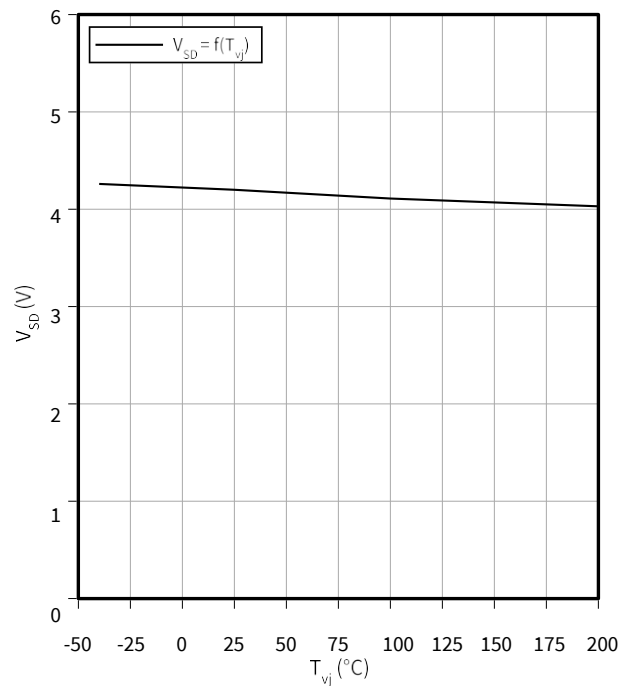
Typical capacitance as a function of drain-source voltage

$C = f(V_{DS})$
 $f = 100 \text{ kHz}, V_{GS} = 0 \text{ V}$



Typical reverse drain voltage as a function of junction temperature

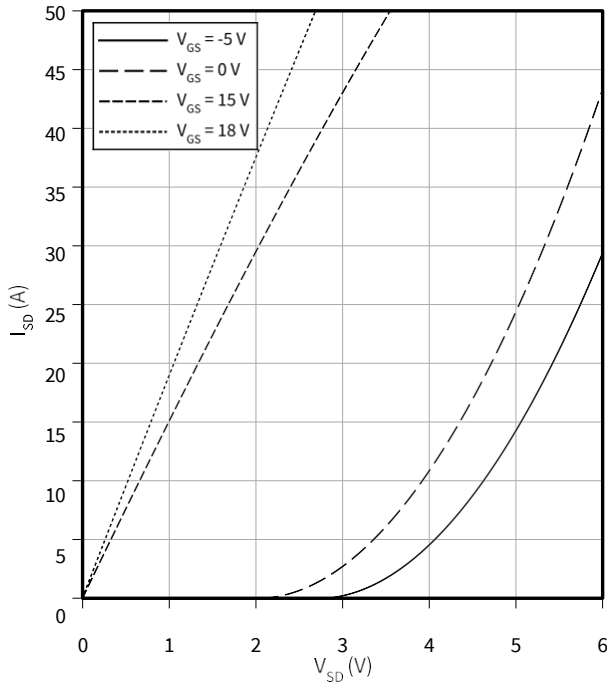
$V_{SD} = f(T_{vj})$
 $I_{SD} = 13 \text{ A}, V_{GS} = 0 \text{ V}$



4 特性图

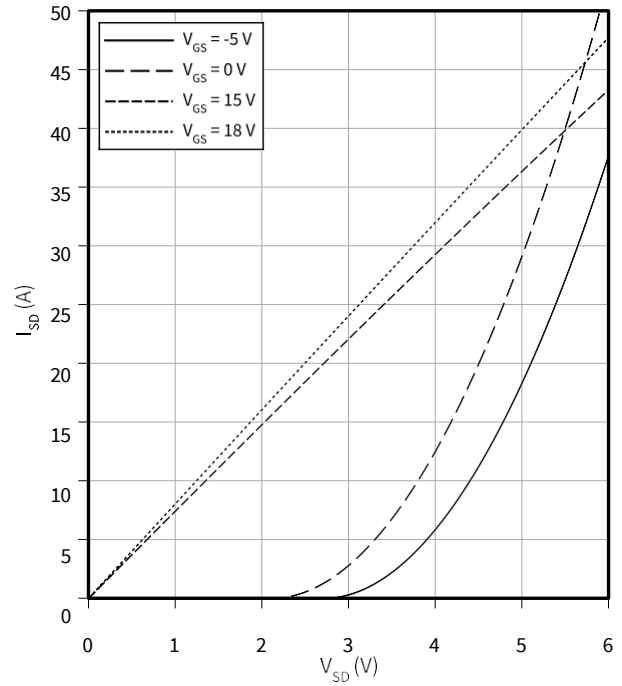
Typical reverse drain current as a function of reverse drain voltage, V_{GS} as a parameter

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



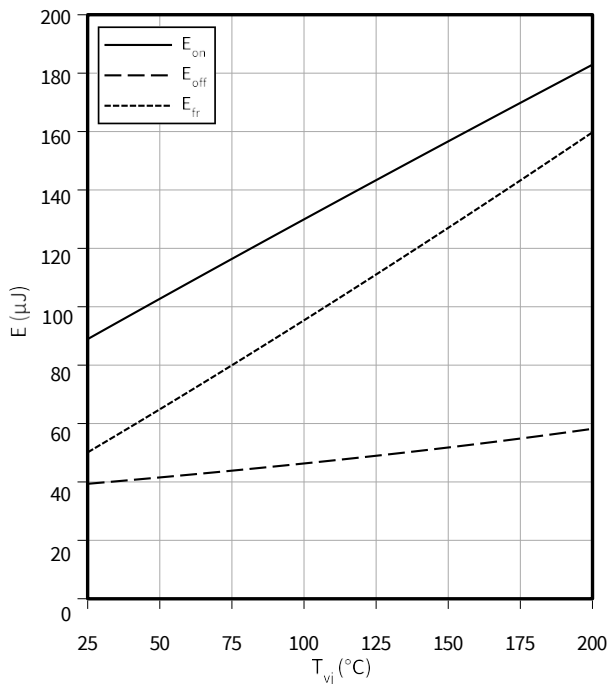
Typical reverse drain current as a function of reverse drain voltage, V_{GS} as a parameter

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



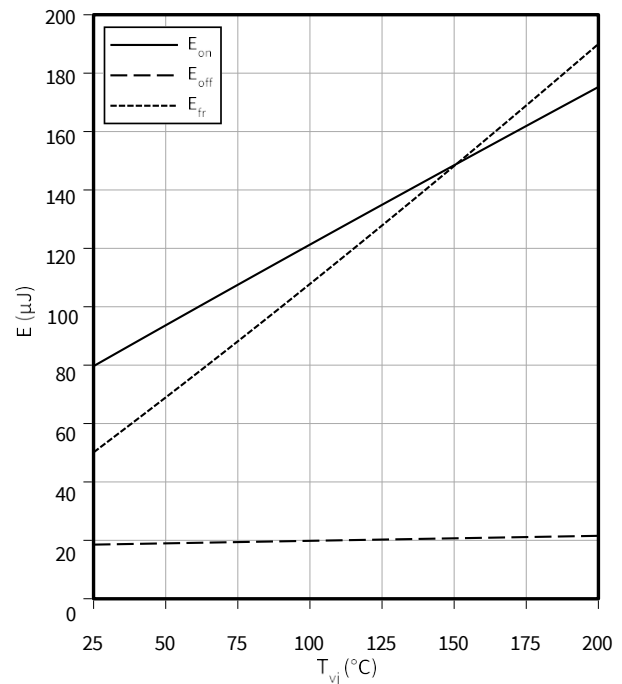
Typical switching energy as a function of junction temperature, test circuit in Fig. F, 2nd device own body diode: $V_{GS} = 0\text{ V}$

$E = f(T_{vj})$
 $V_{GS} = 0/18\text{ V}$, $I_D = 13\text{ A}$, $R_{G,ext} = 2.3\text{ }\Omega$, $V_{DD} = 800\text{ V}$



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

$E = f(T_{vj})$
 $V_{GS} = -5/18\text{ V}$, $I_D = 13\text{ A}$, $R_{G,ext} = 2.3\text{ }\Omega$, $V_{DD} = 800\text{ V}$

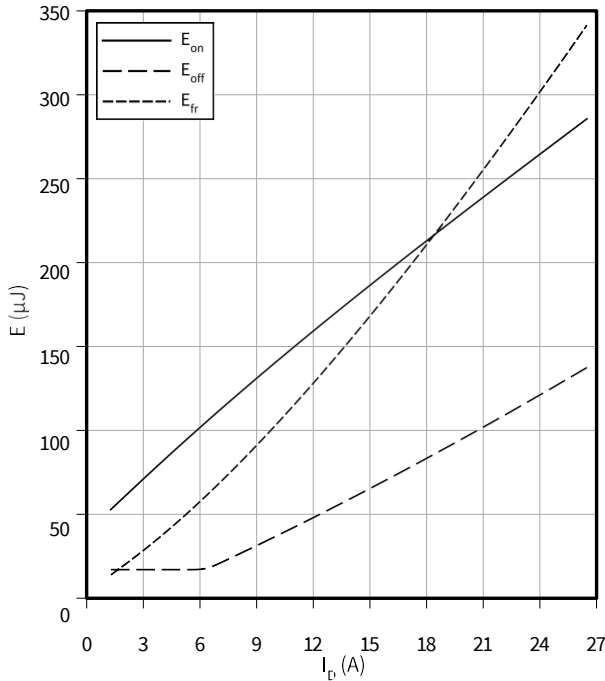


4 特性图

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

$E = f(I_D)$

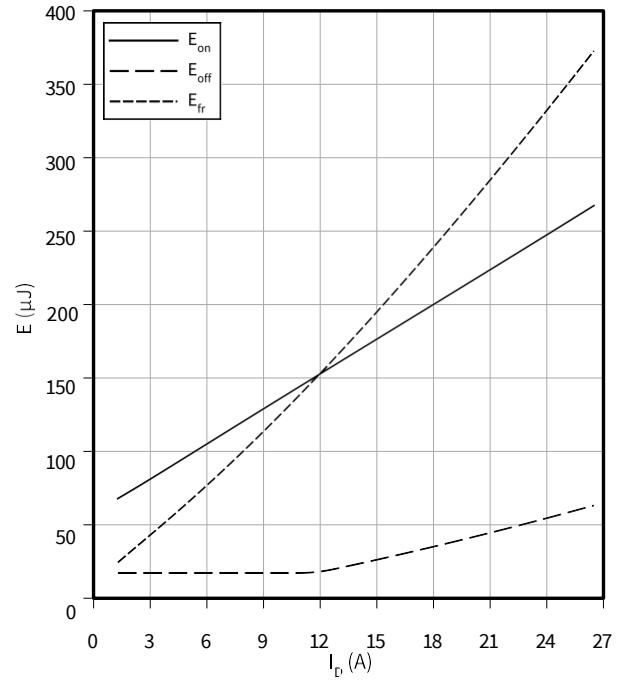
$V_{GS} = 0/18\text{ V}$, $T_{vj} = 175\text{ °C}$, $R_{G,ext} = 2.3\ \Omega$, $V_{DD} = 800\text{ V}$



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

$E = f(I_D)$

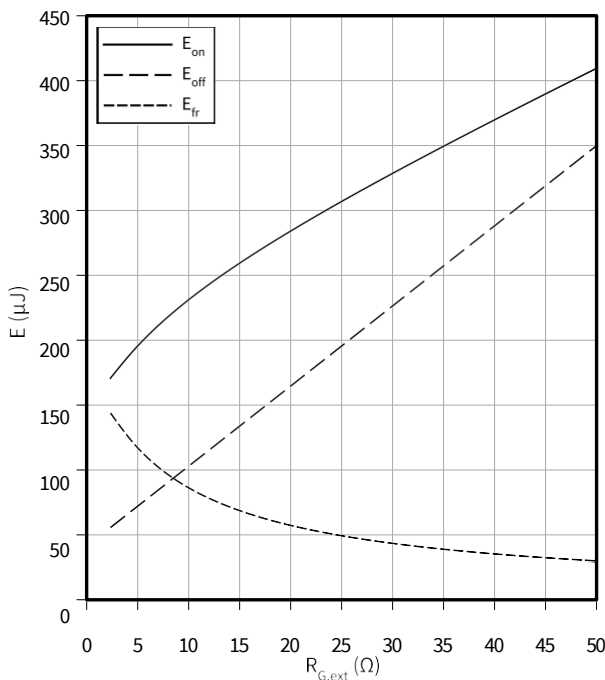
$V_{GS} = -5/18\text{ V}$, $T_{vj} = 175\text{ °C}$, $R_{G,ext} = 2.3\ \Omega$, $V_{DD} = 800\text{ V}$



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

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

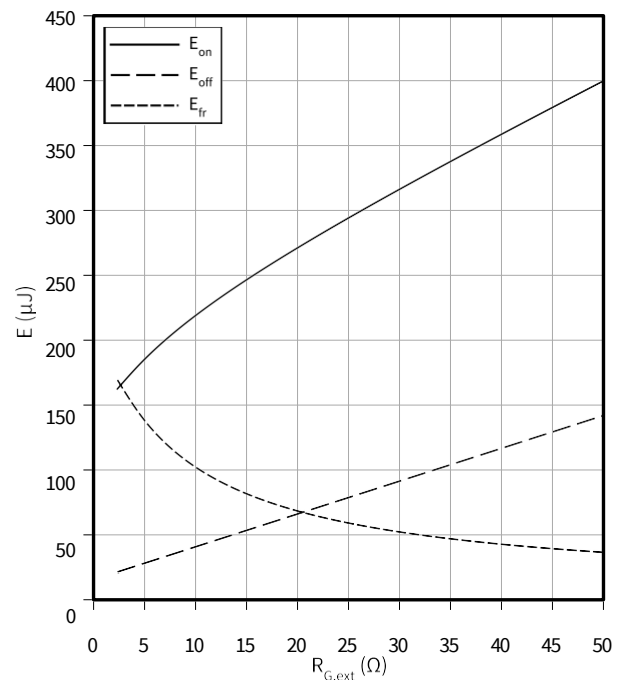
$V_{GS} = 0/18\text{ V}$, $I_D = 13\text{ A}$, $T_{vj} = 175\text{ °C}$, $V_{DD} = 800\text{ V}$



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

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

$V_{GS} = -5/18\text{ V}$, $I_D = 13\text{ A}$, $T_{vj} = 175\text{ °C}$, $V_{DD} = 800\text{ V}$

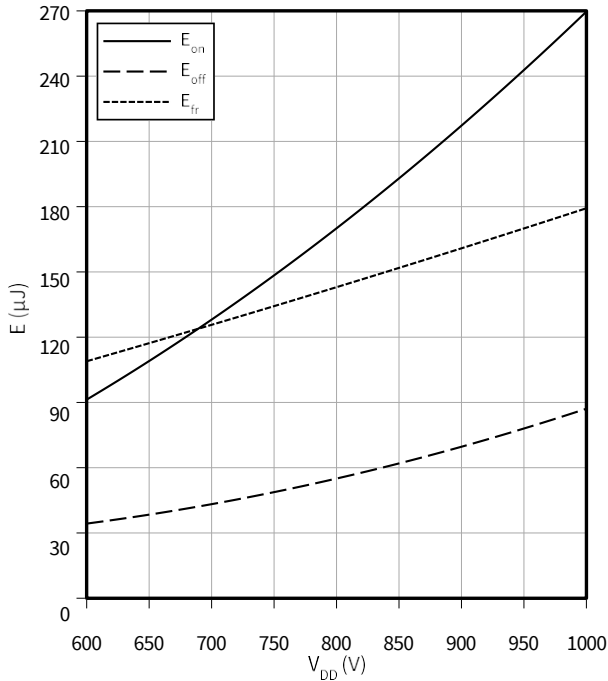


4 特性图

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

$E = f(V_{DD})$

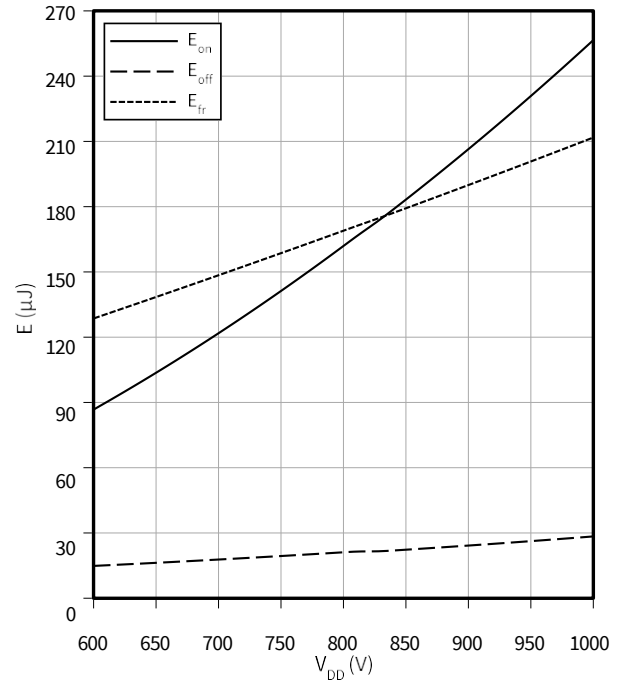
$V_{GS} = 0/18\text{ V}$, $I_D = 13\text{ A}$, $T_{vj} = 175\text{ }^\circ\text{C}$, $R_{G,ext} = 2.3\text{ }\Omega$



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

$E = f(V_{DD})$

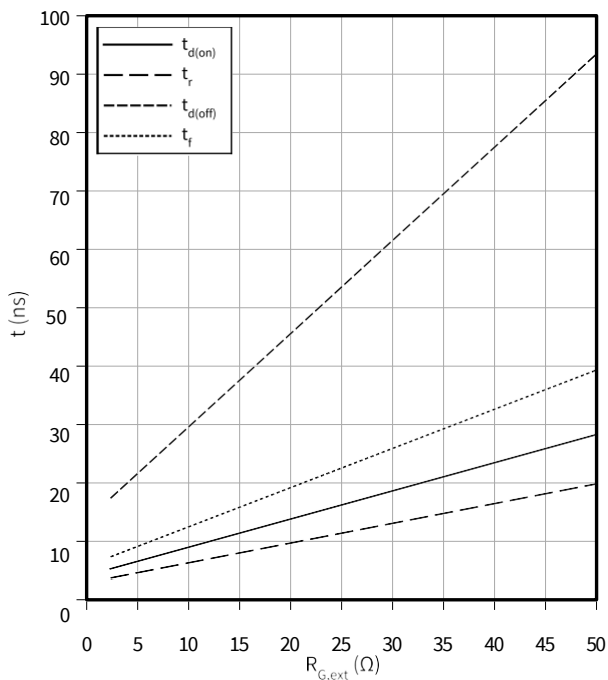
$V_{GS} = -5/18\text{ V}$, $I_D = 13\text{ A}$, $T_{vj} = 175\text{ }^\circ\text{C}$, $R_{G,ext} = 2.3\text{ }\Omega$



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

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

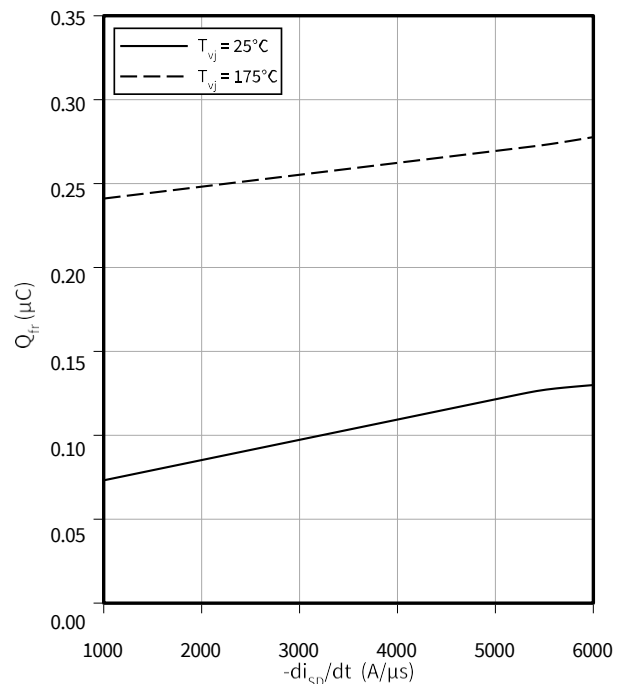
$V_{GS} = 0/18\text{ V}$, $I_D = 13\text{ A}$, $T_{vj} = 175\text{ }^\circ\text{C}$, $V_{DD} = 800\text{ V}$



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

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

$V_{GS} = 0/18\text{ V}$, $I_{SD} = 13\text{ A}$, $V_{DD} = 800\text{ V}$

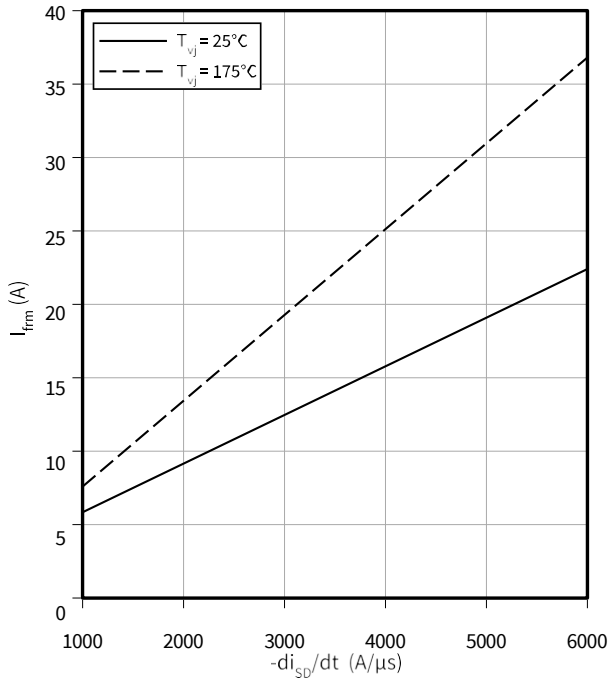


4 特性图

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

$$I_{frm} = f(-di_{SD}/dt)$$

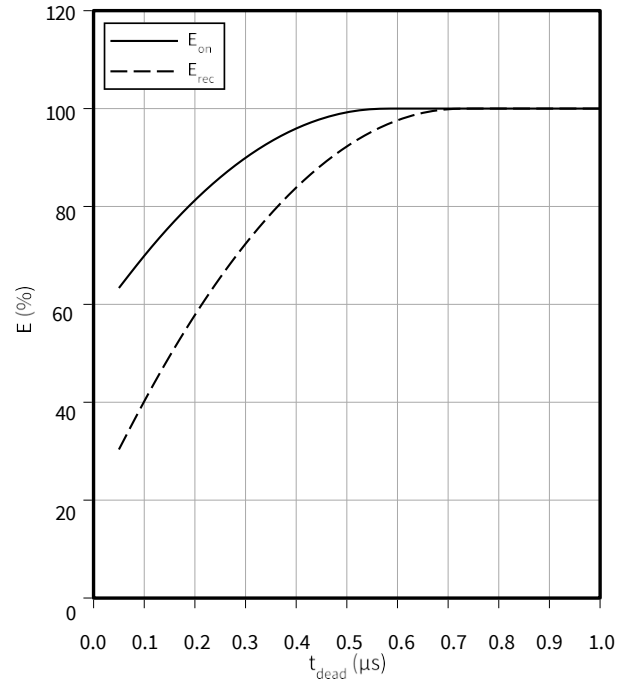
$V_{GS} = 0/18$ V, $I_{SD} = 13$ A, $V_{DD} = 800$ V



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

$$E = f(t_{dead})$$

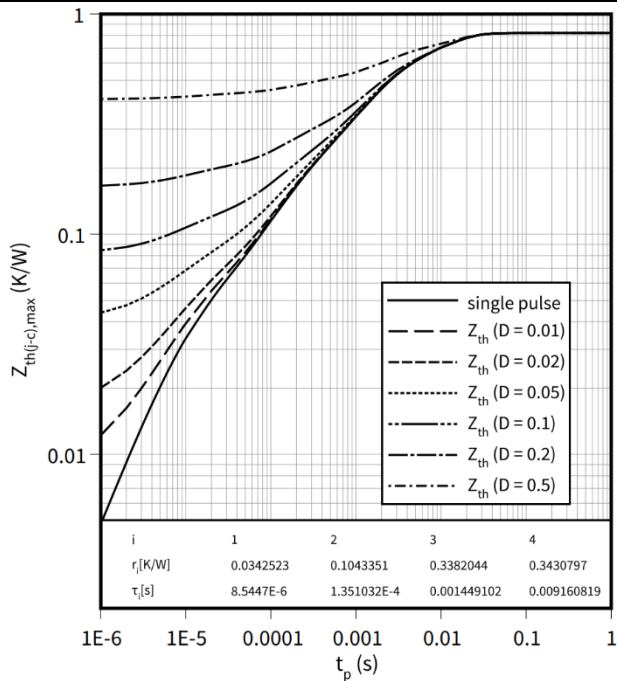
$I_D = 13$ A, $V_{GS} = 0/18$ V, $T_{vj} = 175$ °C, $R_{G,ext} = 2.3$ Ω $V_{DD} = 800$ V



Max. transient thermal impedance (MOSFET/diode)

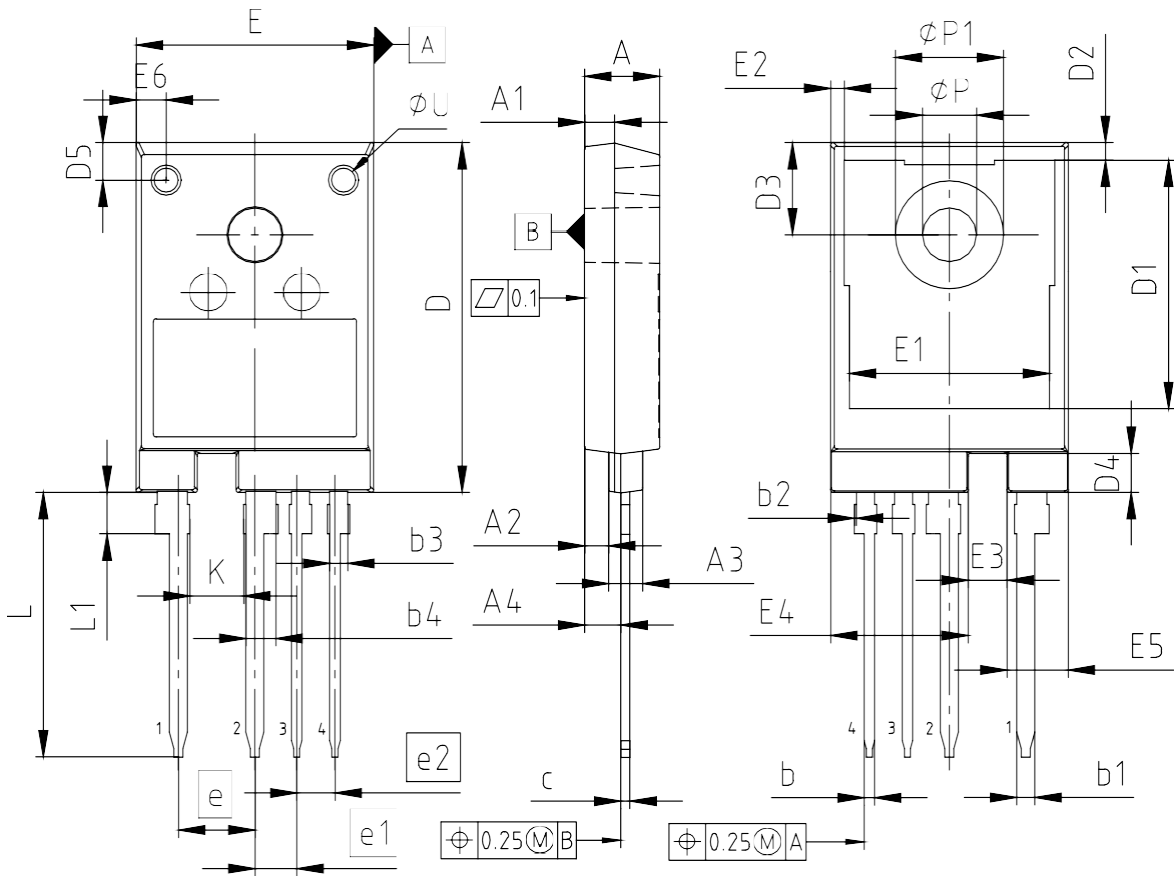
$$Z_{th(j-c),max} = f(t_p)$$

$$D = t_p/T$$



5 封装外形

5 封装外形



PACKAGE - GROUP NUMBER: PG-T0247-4-U07					
DIMENSIONS	MILLIMETERS		DIMENSIONS	MILLIMETERS	
	MIN.	MAX.		MIN.	MAX.
A	4.90	5.10	E	15.60	16.00
A1	1.90	2.10	E1	13.10	13.50
A2	1.50	1.70	E2	0.60	1.20
A3	2.16	2.36	E3	2.48	2.68
A4	2.31	2.51	E4	9.05	9.25
b	0.60	0.80	E5	3.97	4.17
b1	1.10	1.30	E6	1.80	2.20
b2	---	0.15	e	5.08	
b3	1.10	1.30	e1	2.79	
b4	1.90	2.10	e2	2.54	
c	0.50	0.70	K	3.50	---
D	23.10	23.50	L	17.50	17.80
D1	16.25	16.85	L1	2.61	2.91
D2	0.97	1.37	N	4	
D3	6.00	6.30	ØP1	7.00	7.40
D4	2.50	2.70	ØP	3.50	3.70
D5	2.30	2.70	ØU	1.40	1.80

NOTES: DIMENSIONS DO NOT INCLUDE MOLD FLASH, PROTRUSION OR GATE BURRS
N IS THE NUMBER OF LEADS

图 1

6 测试条件

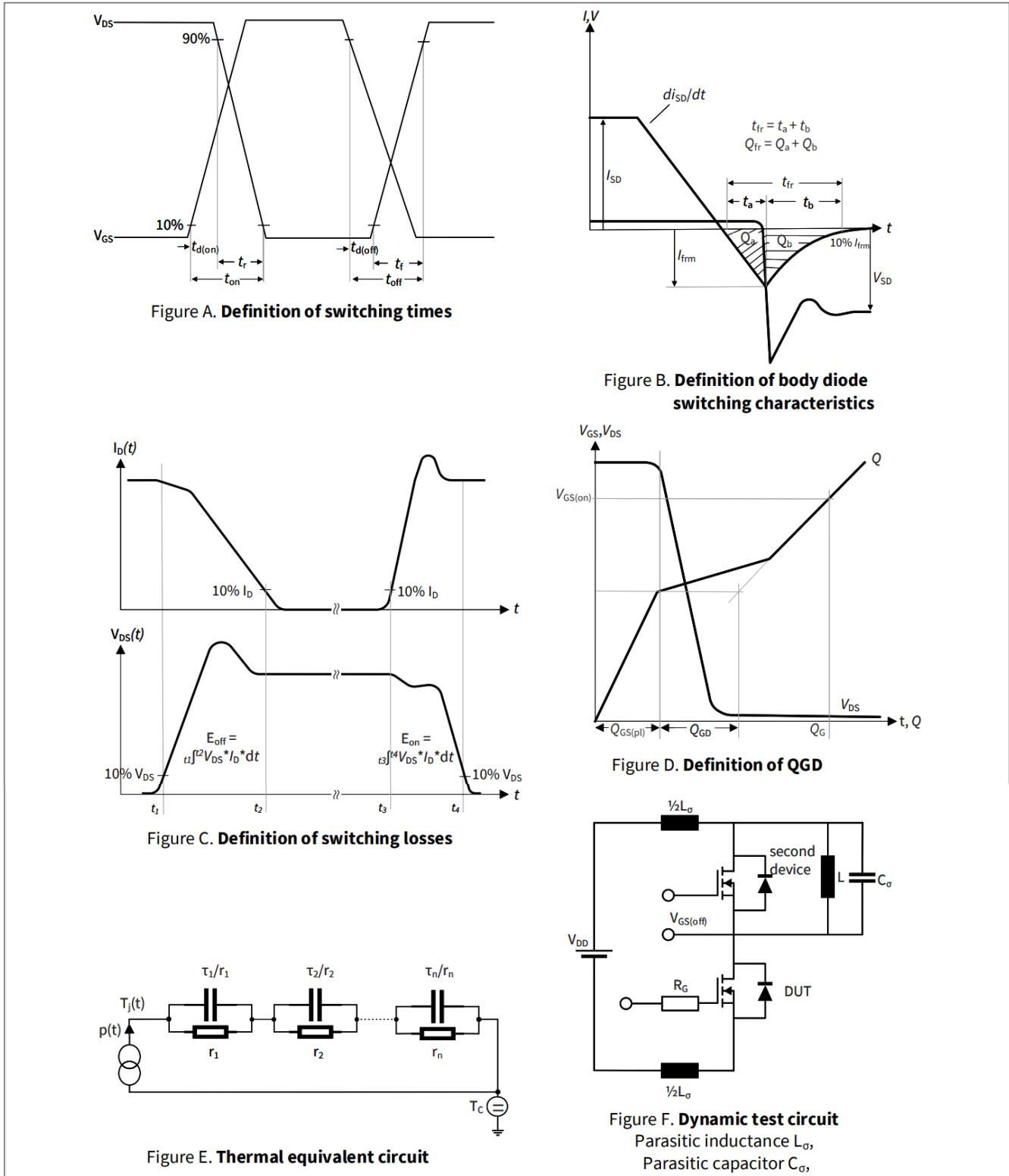


图 2

修订记录

Document revision	Date of release	Description of changes
0.10	2024-09-06	Preliminary datasheet
1.00	2024-09-27	Final datasheet
1.10	2025-02-04	Updated “Potential Applications” on Page 1 Correction of switching parameters in Table 4 and corresponding graphs Correction of body diode characteristic values in Table 6 and corresponding graphs Editorial changes
1.20	2025-07-04	Increased I_{DM} in Table 2 Added switching information for $V_{GS} = -5/18\text{ V}$ in Table 5 and 6 and corresponding diagrams Added I_{SDC} in Table 5 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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