



MG065R240B

主要参数 MAIN CHARACTERISTICS

I_D	15.5A
V_{CE}	650V
$R_{dson-typ}$ (@ $V_{gs}=15V$)	240m Ω
Q_g-typ	12.5nC

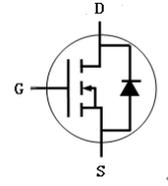
用途

- LED 驱动
- PD 快充
- 电源适配器
- 空调系统
- 电动自行车充电器

APPLICATIONS

- LED driver
- PD charger
- PC adapte
- Air-conditioning
- E-bike charger

封装 Package



DPAK

产品特性

- 高阻断电压
- 低导通电阻
- 低电容高速开关
- 易于驱动
- RoHS 产品

FEATURES

- High Blocking Voltage
- Low On-Resistance
- High Speed Switching with Low Capacitances
- Easy to Parallel and Simple to Drive
- RoHS product

订货信息 ORDER MESSAGE

订货型号 Order codes				印 记 Marking	封 装 Package
有卤-条管 Halogen-Tube	无卤-条管 Halogen-Free-Tube	有卤-编带 Halogen-Reel	无卤-编带 Halogen-Free-Reel		
N/A	MG065R240B-R-BR	N/A	N/A	MG065R240B	DPAK



绝对最大额定值 ABSOLUTE RATINGS ($T_c=25^{\circ}\text{C}$)

项 目 Parameter	符 号 Symbol	数 值 Value	单 位 Unit	测试条件 Tests conditions
最高漏极-源极直流电压 Drain-Source Voltage	V_{DSmax}	650	V	$V_{GS}=0V, I_D=100\mu A$
最高栅源电压 Gate-Source Voltage	V_{GSmax}	-10/+22	V	Absolute maximum values
工作栅源电压 Gate-Source Voltage	V_{GSop}	0/+15	V	Recommended operational values
连续漏极电流 Drain Current -continuous	I_D	15.5	A	$T_C=25^{\circ}\text{C}$
		11	A	$T_C=100^{\circ}\text{C}$
最大脉冲漏极电流 Drain Current - pulse	I_{DM}	25	A	Pulse width t_p limited by T_{jmax}
耗散功率 Power Dissipation	P_D	67	W	$T_C=25^{\circ}\text{C}$
单脉冲雪崩能量 Single Pulsed Avalanche Energy	E_{AS}	25	mJ	$L=0.5\text{mH}, I_{AS}=10\text{A}, V_{DD}=50\text{V}, V_{GS}=15\text{V}$
最高结温及存储温度 Operating and Storage Temperature Range	T_J, T_{STG}	-55~+175	$^{\circ}\text{C}$	
引线最高焊接温度 Maximum Lead Temperature for Soldering Purposes	T_L	260	$^{\circ}\text{C}$	



电特性 ELECTRICAL CHARACTERISTICS

项 目 Parameter	符 号 Symbol	测试条件 Tests conditions	最小 Min	典型 Typ	最大 Max	单位 Units
漏-源击穿电压 Drain-Source Voltage	BV_{DSS}	$I_D=100\mu A, V_{GS}=0V$	650	-	-	V
阈值电压 Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D=10mA, T_C=25^\circ C$	-	3.9	-	V
		$V_{DS} = V_{GS}, I_D=10mA, T_C=175^\circ C$	-	2.8	-	V
零栅压下漏极漏电流 Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=650V, V_{GS}=0V, T_C=25^\circ C$	-	0.1	20	μA
		$V_{DS}=650V, V_{GS}=0V, T_C=175^\circ C$	-	1	-	
栅极体漏电流 Gate-body leakage current	I_{GSS}	$V_{DS}=0V, V_{GS} =22V, T_C=25^\circ C$	-	1	250	nA
		$V_{DS}=0V, V_{GS} =-10V, T_C=25^\circ C$	-			
导通电阻 Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS} =15V, I_D=5A, T_C=25^\circ C$	-	240	280	m Ω
		$V_{GS} =15V, I_D=5A, T_C=175^\circ C$	-	231	-	m Ω
跨导 Transconductance	g_{fs}	$V_{DS} = 20V, I_D=5A, T_J = 25^\circ C$	-	3.6	-	S
输入电容 Input capacitance	C_{iss}	$V_{DS}=650V,$ $V_{GS} =0V,$ $f=1MHz$	-	294	-	pF
输出电容 Output capacitance	C_{oss}		-	25	-	pF
反向传输电容 Reverse transfer capacitance	C_{rss}		-	4	-	pF
导通开关能量 Turn-On Switching Energy	E_{ON}	$V_{DD}=400V, V_{GS}=0/15V, I_D=7A,$ $R_{G(on)} = 2.2\Omega, L= 600\mu H$	-	43.2	-	μJ
关断开关能量 Turn-Off Switching Energy	E_{OFF}		-	5.5	-	
延迟时间 Turn-On delay time	$t_{d(on)}$	$V_{DD}=400V, V_{GS}=0/15V, I_D= 7A,$ $R_{G(ext)} = 2.2\Omega, L= 600\mu H$	-	6.6	-	ns
上升时间 Turn-On rise time	t_r		-	18.3	-	ns
延迟时间 Turn-Off delay time	$t_{d(off)}$		-	17.7	-	ns
下降时间 Turn-Off Fall time	t_f		-	32.1	-	ns
栅电阻 Intrinsic gate resistance	R_G	$f = 1 MHz, V_{AC}=25mV$	-	TBD	-	Ω
栅-源电荷 Gate-Source charge	Q_{gs}	$V_{DD}=400V, V_{GS}=0/15V, I_D =7A$	-	5.5	-	nC
栅-漏电荷 Gate-Drain charge	Q_{gd}		-	2.6	-	
栅极电荷总量 Total Gate Charge	Q_g		-	15.3	-	





漏-源二极管特性 Drain-Source Diode Characteristics

项 目 Parameter	符 号 Symbol	测试条件 Tests conditions	典型 Typ	最大 Max	单位 Units
正向压降 Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS} = 0V, I_{SD} = 3.5A, T_J = 25\text{ }^{\circ}C$	3.3	-	V
		$V_{GS} = 0V, I_{SD} = 3.5A, T_J = 175\text{ }^{\circ}C$	2.8	-	V
正向最大连续电流 Maximum Continuous Drain -Source Diode Forward Current	I_S	$T_C = 25\text{ }^{\circ}C$	-	12	A
		$T_C = 100\text{ }^{\circ}C$	-	7	
正向最大脉冲电流 Maximum Pulsed Drain-Source Diode Forward Current	I_{SM}	$T_C = 25\text{ }^{\circ}C$	-	23	A
反向恢复时间 Reverse recovery time	t_{rr}	$V_{GS} = 0V, I_{SD} = 7A, di/dt = 2kA/\mu s,$ $V_{DS} = 400V \quad T_J = 25\text{ }^{\circ}C$	9.9	-	ns
反向恢复电荷 Reverse recovery charge	Q_{rr}		32.6	-	nC
峰值反向恢复电流 Peak Reverse Recovery Current	I_{rrm}		5.8	-	A
反向恢复能量 Reverse Recovery Energy	E_{rr}		0.31	-	μJ

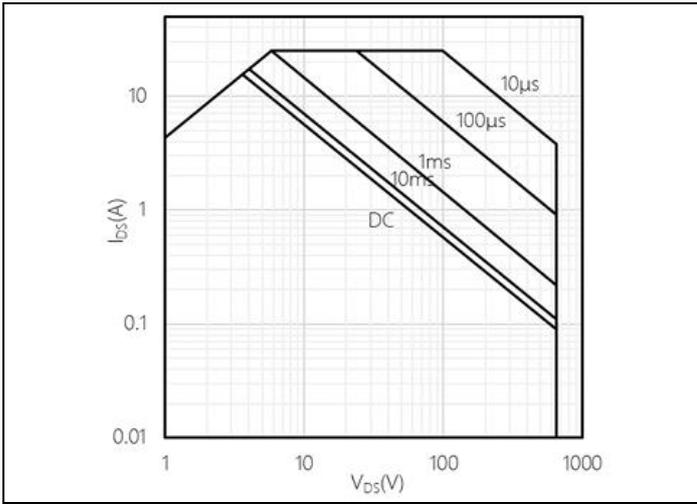
热特性 THERMAL CHARACTERISTIC

项 目 Parameter	符 号 Symbol	典型 Typ	单位 Unit
结到管壳的热阻 Thermal Resistance, Junction to Case	$R_{th(j-c)}$	2.23	$^{\circ}C/W$
结到环境的热阻 Thermal Resistance, Junction to Ambient	$R_{th(j-A)}$	40	$^{\circ}C/W$

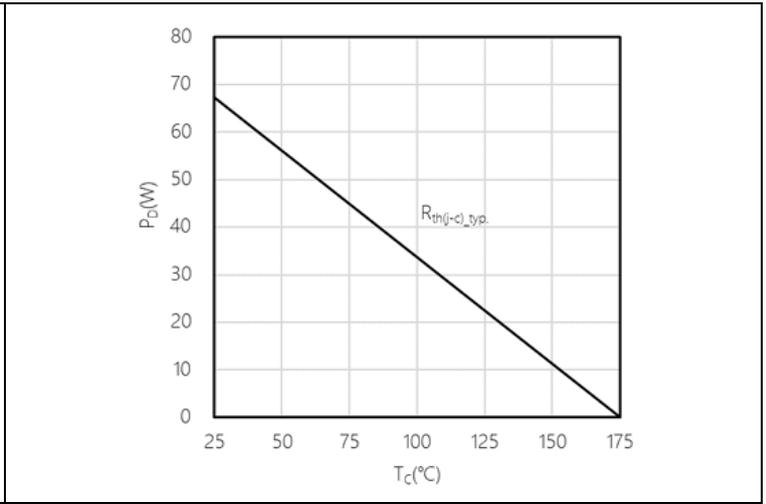




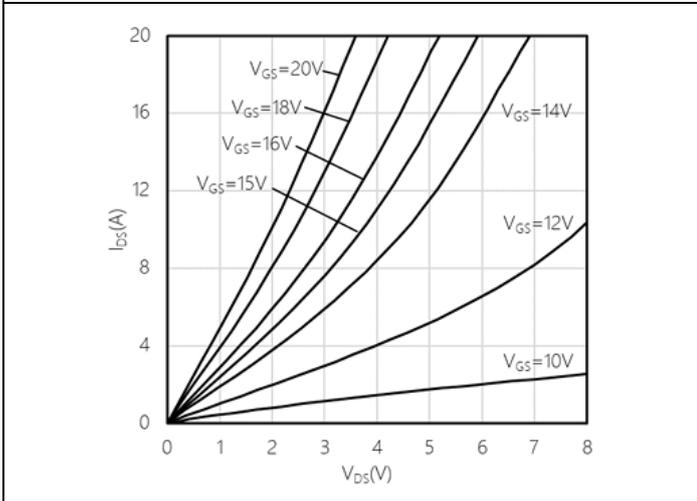
典型性能 Typical Performance



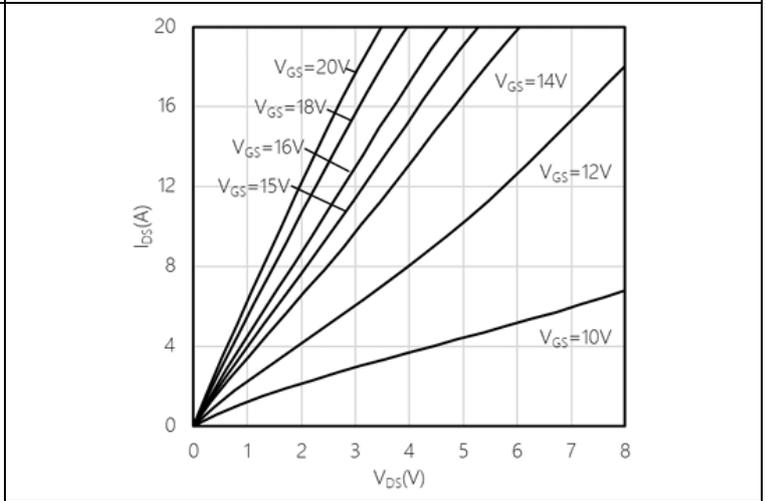
Safe operating area (SOA)



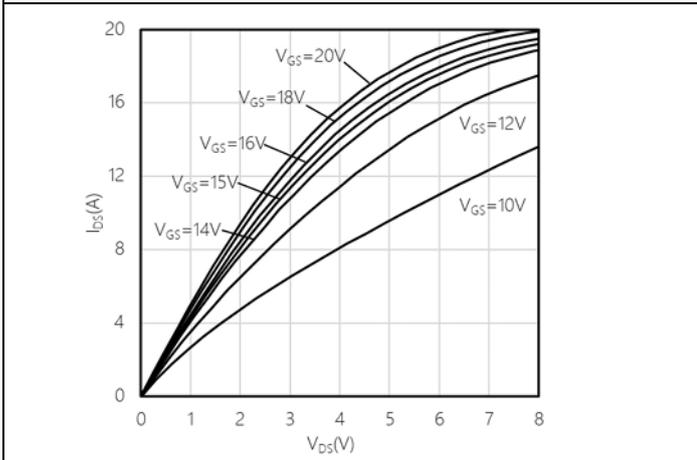
Power Derating



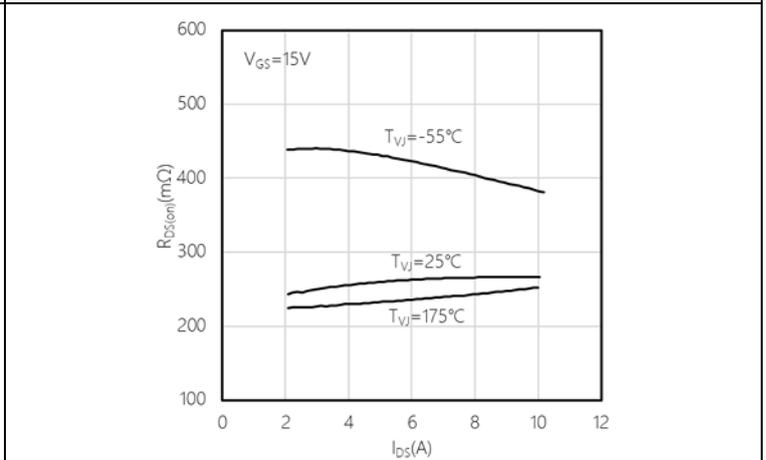
Typical output characteristic, V_{GS} as parameter
 $T_{VJ} = -55^{\circ}$ C



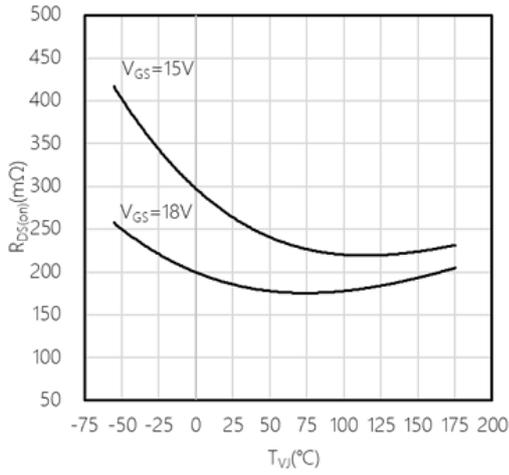
Typical output characteristic, V_{GS} as parameter
 $T_{VJ} = 25^{\circ}$ C



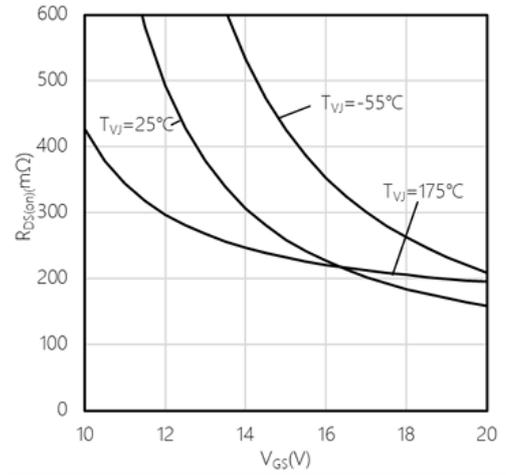
Typical output characteristic, V_{GS} as parameter
 $T_{VJ} = 175^{\circ}$ C



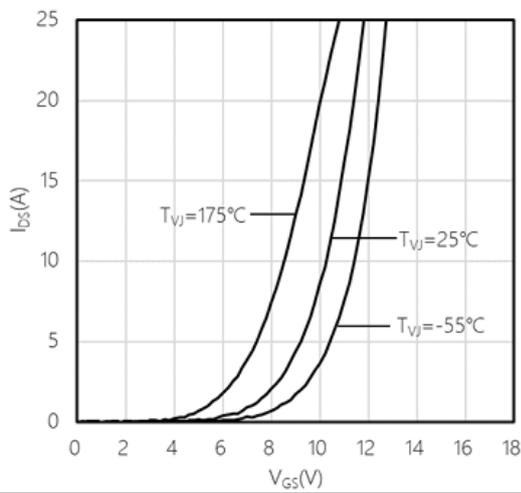
Typical on-state resistance as a function of drain current



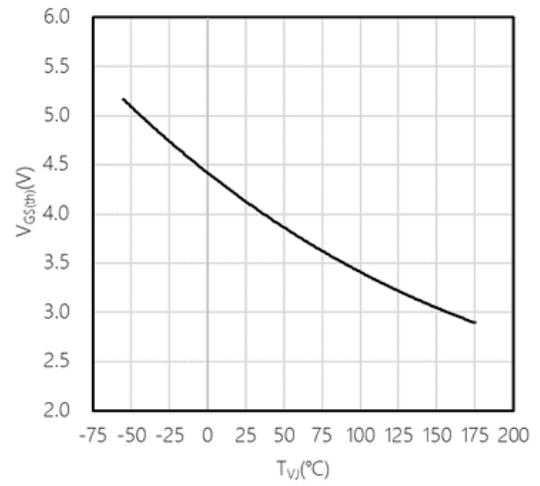
Typical on-state resistance as a function of temperature



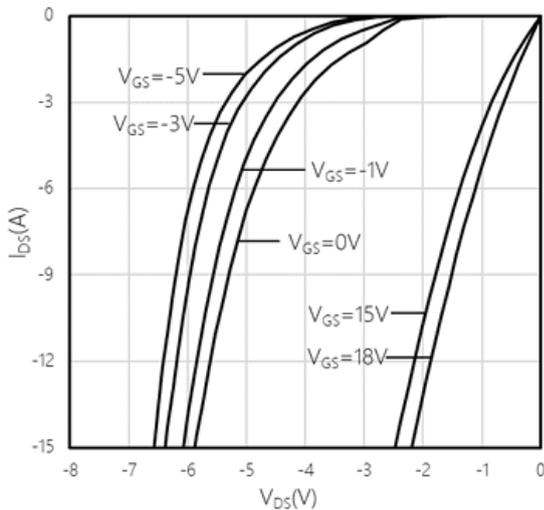
Typical on-state resistance as a function of V_{GS}



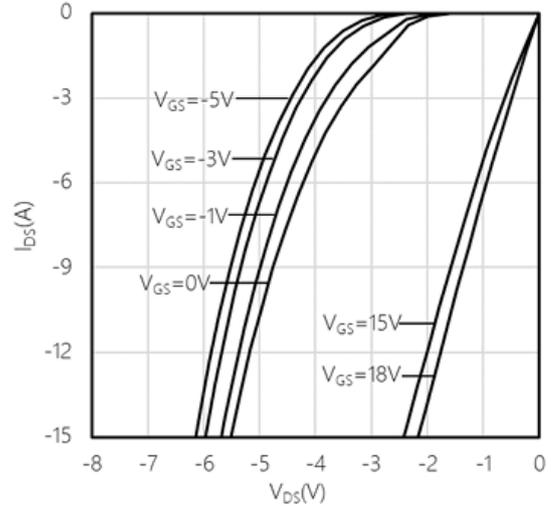
Typical transfer characteristic



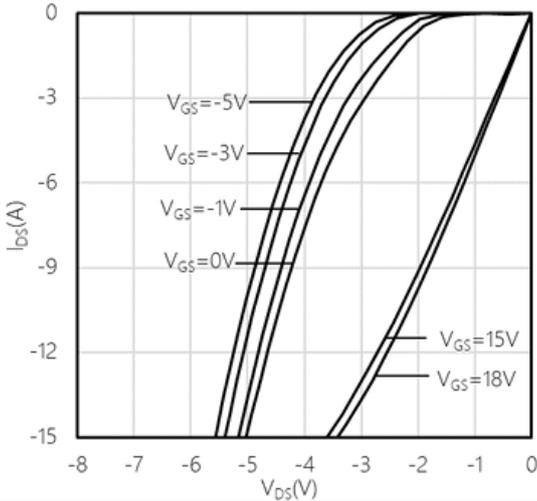
Typical gate-source threshold voltage as a function of junction temperature



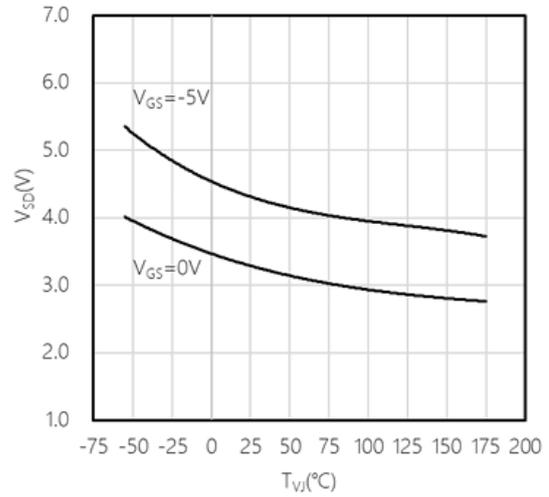
Typical reverse drain current as function of reverse drain voltage, V_{GS} as parameter $I_{DS} = f(V_{DS}), T_{VJ} = -55\text{ }^{\circ}\text{C}$



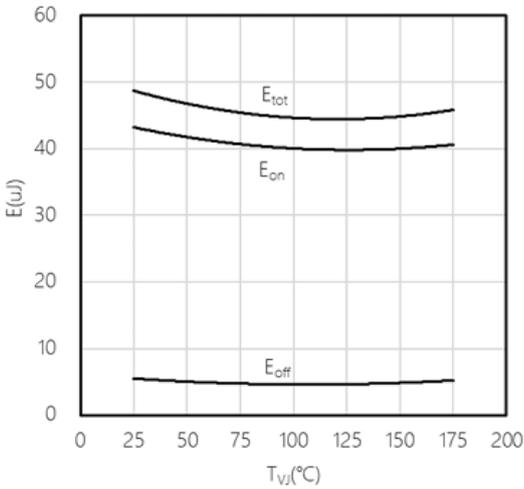
Typical reverse drain current as function of reverse drain voltage, V_{GS} as parameter $I_{DS} = f(V_{DS}), T_{VJ} = 25\text{ }^{\circ}\text{C}$



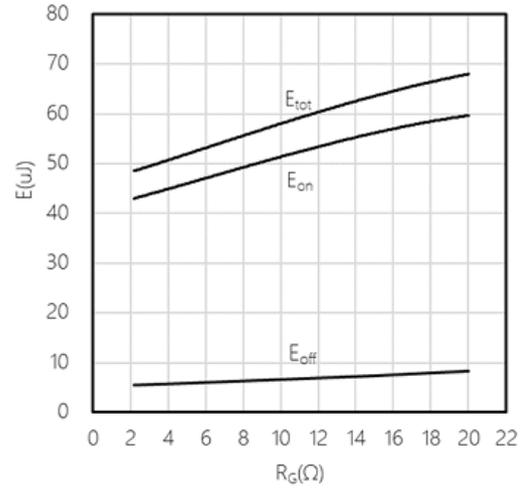
Typical reverse drain current as function of reverse drain voltage, V_{GS} as parameter $I_{DS} = f(V_{DS})$, $T_{VJ} = 175\text{ }^{\circ}\text{C}$



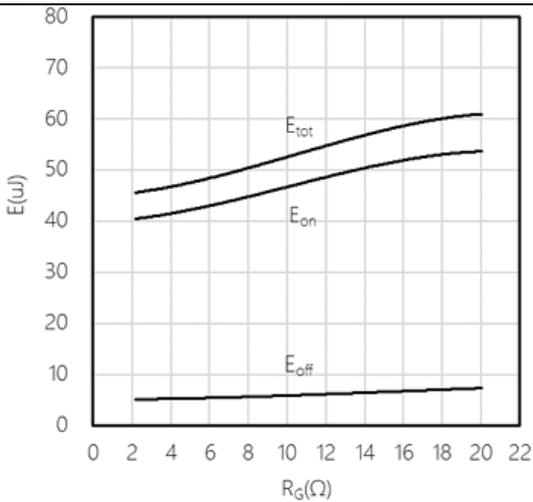
Typical reverse drain voltage as function of junction temperature $V_{SD} = f(T_{VJ})$, $I_{SD} = 2\text{ A}$



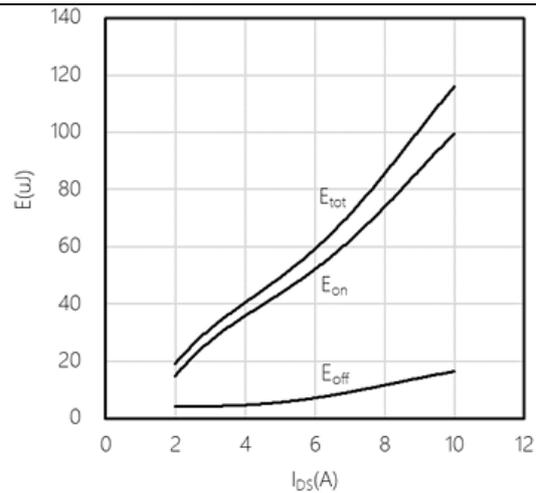
Typical switching energy as a function of junction temperature, 2nd device own body diode



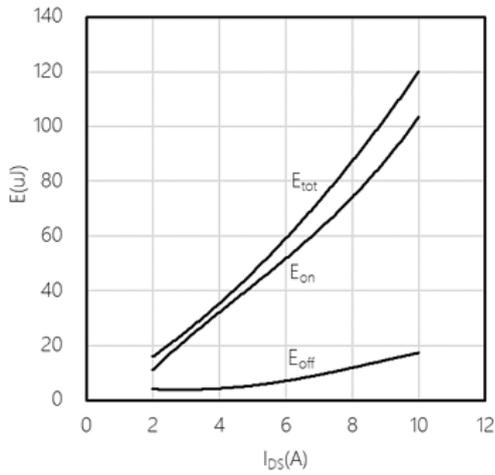
Typical switching energy losses as a function of gate resistance, 2nd device own body diode $T_{VJ} = 25\text{ }^{\circ}\text{C}$



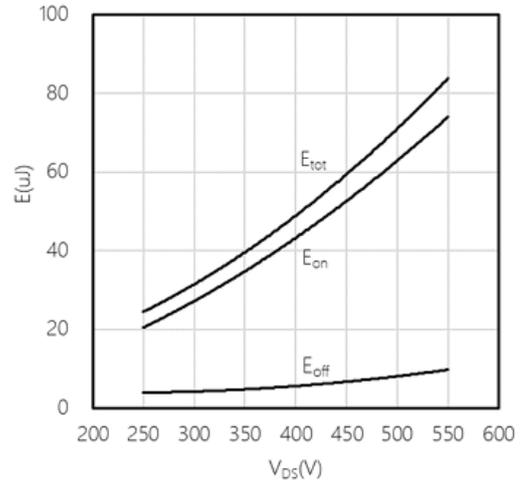
Typical switching energy losses as a function of gate resistance, 2nd device own body diode $T_{VJ} = 175\text{ }^{\circ}\text{C}$



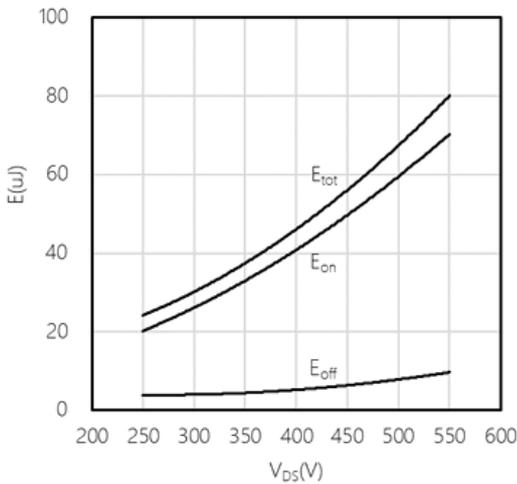
Typical switching energy losses as a function of I_{DS} , 2nd device own body diode $T_{VJ} = 25\text{ }^{\circ}\text{C}$



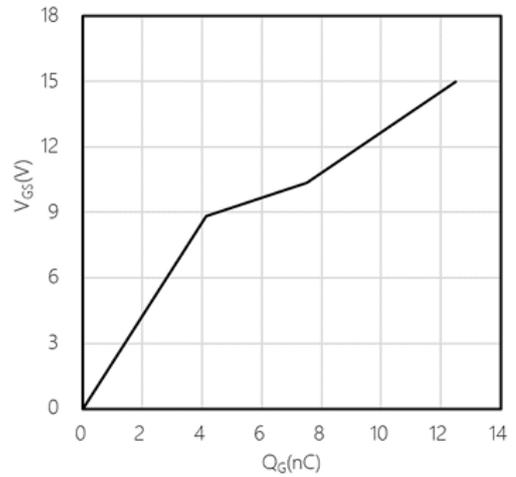
Typical switching energy losses as a function of I_{DS} , 2nd device own body diode $T_{VJ} = 175\text{ }^{\circ}\text{C}$



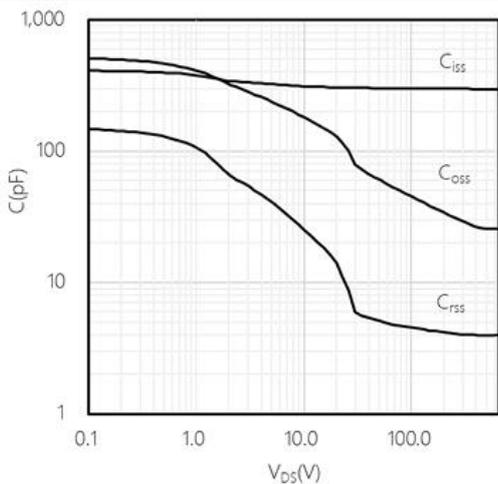
Typical switching energy losses as a function of V_{DS} , 2nd device own body diode $T_{VJ} = 25\text{ }^{\circ}\text{C}$



Typical switching energy losses as a function of V_{DS} , 2nd device own body diode $T_{VJ} = 25\text{ }^{\circ}\text{C}$

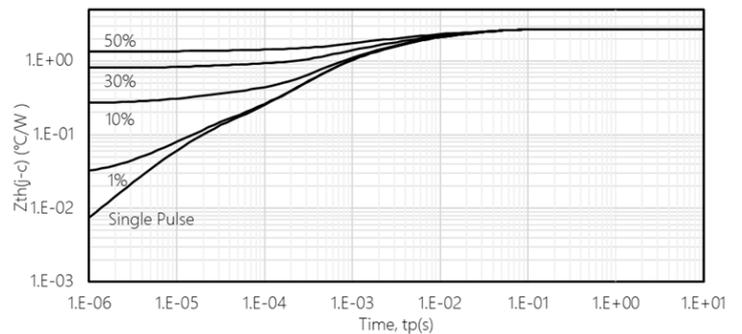


Typical gate charge



Typical capacitance as a function of drain-source voltage

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



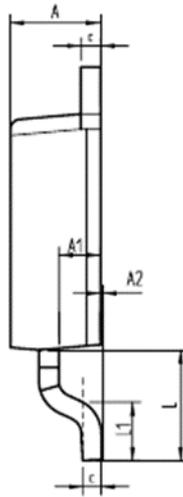
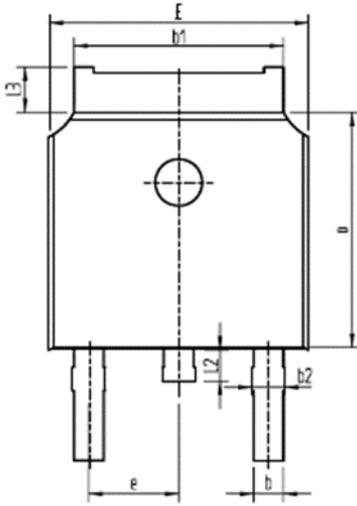
Transient thermal resistance (MOSFET)



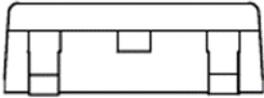
外形尺寸 PACKAGE MECHANICAL DATA

DPAK

单位 Unit: mm



SYMBOL	mm	
	MIN	MAX
A	2.16	2.41
A1	0.97	1.17
A2	0.00	0.15
b	0.63	0.93
b1	5.13	5.53
b2	0.66	0.96
c	0.40	0.60
D	5.80	6.40
E	6.30	6.90
e	2.286BSC	
L	2.50	3.30
L1	1.20	1.80
L2	0.60	1.00
L3	0.85	1.30





注意事项

1. 吉林华微电子股份有限公司的产品销售分为直销和销售代理，无论哪种方式，订货时请与公司核实。
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3. 在电路设计时请不要超过器件的绝对最大额定值，否则会影响整机的可靠性。
4. 本说明书如有版本变更不另外告知。

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3. Please do not exceed the absolute maximum ratings of the device when circuit designing.
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