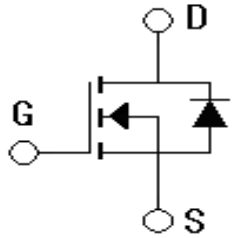
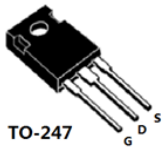
MS65R037AR

主要参数 MAIN CHARACTERISTICS

I_D	75A
V_{DSS}	650 V
Rdson-max (@Vgs=10V)	37 mΩ
Qg-typ	178 nC

封装 Package





用途

- 高频开关电源
- 电子镇流器
- LED 电源

APPLICATIONS

- High frequency switching mode power supply
- Electronic ballast
- LED power supply

产品特性

- 低栅极电荷
- 开关速度快
- 产品全部经过雪崩测试
- 高抗 dv/dt 能力
- RoHS 产品
- 超结产品

FEATURES

- Low gate charge
- Fast switching
- 100% avalanche tested
- Improved dv/dt capability
- RoHS product
- Super Junction MOS

订货信息 ORDER MESSAGE

订 货 型 号 Order codes				印 记 Marking	封 装 Package
有卤-条管	无卤-条管	有卤-编带	无卤-编带		
Halogen-Tube	Halogen-Free-Tube	Halogen-reel	Halogen-Free-Reel		
MS65R037AR-GE-B	MS65R037AR -GE-BR	N/A	N/A	MS65R037AR	TO-247

绝对最大额定值 ABSOLUTE RATINGS (Tc=25℃)

项 目 Parameter	符 号 Symbol	数 值 Value	单 位 Unit
最高漏极－源极直流电压 Drain-Source Voltage	V_{DSS}	650	V
连续漏极电流 Drain Current -continuous	I_D T=25℃	75*	A
	T=100℃	48*	A
最大脉冲漏极电流（注 1） Drain Current - pulse（note 1）	I_{DM}	230*	A
最高栅源电压 Gate-Source Voltage	V_{GSS}	±30	V
单脉冲雪崩能量（注 2） Single Pulsed Avalanche Energy（note 2）	E_{AS}	600	mJ
耗散功率 Power Dissipation	P_D T_C=25℃	430	W
	-Derate above 25℃	3.44	W/℃
最高结温及存储温度 Operating and Storage Temperature Range	T_J，T_{STG}	-55～+150	℃
引线最高焊接温度 Maximum Lead Temperature for Soldering Purposes	T_L	300	℃

*漏极电流由最高结温限制

*Drain current limited by maximum junction temperature

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
关态特性 Off –Characteristics						
漏一源击穿电压 Drain-Source Voltage	BV_{DSS}	I_D=250μA, V_{GS}=0V	650	-	-	V
击穿电压温度特性 Breakdown Voltage Temperature Coefficient	$\Delta BV_{DSS}/\Delta T_J$	I_D=250μA, referenced to 25℃	-	0.65	-	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℃	-	-	10	μA
正向栅极体漏电流 Gate-body leakage current, forward	I_{GSSF}	V_{DS}=0V, V_{GS} =30V	-	-	100	nA
反向栅极体漏电流 Gate-body leakage current, reverse	I_{GSSR}	V_{DS}=0V, V_{GS} =-30V	-	-	-100	nA
通态特性 On-Characteristics						
阈值电压 Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}， I_D=250μA	3	3.5	4	V
静态导通电阻 Static Drain-Source On-Resistance	$R_{DS(ON)}$	VGS =10V,ID=30A, Tj=25℃	-	33	37	mΩ
		VGS =10V,ID=30A, Tj=150℃	-	80	-	
动态特性 Dynamic Characteristics						
输入电容 Input capacitance	C_{iss}	V_{DS}=50V, V_{GS} =0V, f=250KH_Z	-	4200	-	pF
输出电容 Output capacitance	C_{oss}		-	130	-	pF
反向传输电容 Reverse transfer capacitance	C_{rss}		-	3.2	-	pF
栅极电阻 Gate Resistance	RG	f=1MH_Z	-	4	-	Ω

电特性 ELECTRICAL CHARACTERISTICS

开关特性 Switching Characteristics						
延迟时间 Turn-On delay time	$t_d(on)$	V_{DD}=400V,I_D=30A,R_G=3.3Ω, VGS=12V （note 3，4）	-	25	-	ns
上升时间 Turn-On rise time	t_r		-	21	-	ns
延迟时间 Turn-Off delay time	$t_d(off)$		-	110	-	ns
下降时间 Turn-Off Fall time	t_f		-	4	-	ns
栅极电荷总量 Total Gate Charge	Q_g	V_{DS} =400V , I_D=30A V_{GS} =0 to10V （note 3，4）	-	178	-	nC
栅－源电荷 Gate-Source charge	Q_{gs}		-	25	-	nC
栅－漏电荷 Gate-Drain charge	Q_{gd}		-	106	-	nC
漏－源二极管特性及最大额定值 **Drain-Source Diode Characteristics and Maximum Ratings**						
正向最大连续电流 Maximum Continuous Drain -Source Diode Forward Current	I_S		-	-	75	A
正向最大脉冲电流 Maximum Pulsed Drain-Source Diode Forward Current	I_{SM}		-	-	230	A
正向压降 Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=30A	-	-	1.3	V
反向恢复时间 Reverse recovery time	t_{rr}	V_{DD}=400V, I_S=30A di/dt=300A/μs (note 4)	-	110	-	ns
反向恢复电荷 Reverse recovery charge	Q_{rr}		-	1.3	-	μC
反向峰值电流 Peak reverse recovery current	I_{rrm}		-	-18	-	A

热特性 THERMAL CHARACTERISTIC

项　目 Parameter	符　号 Symbol	最大 Max	单　位 Unit
结到管壳的热阻 Thermal Resistance, Junction to Case	Rth(j-c)	0.29	℃/W
结到环境的热阻 Thermal Resistance, Junction to Ambient	$R_{th(j-A)}$	62	℃/W

注释：

1：脉冲宽度由最高结温限制

2：L=50mH, V_{DD}=50V, R_G=25 Ω,VG=10V 起始结温 T_J=25℃

3：脉冲测试：脉冲宽度≤300μs,占空比≤2％

4：基本与工作温度无关

Notes:

1：Pulse width limited by maximum junction temperature

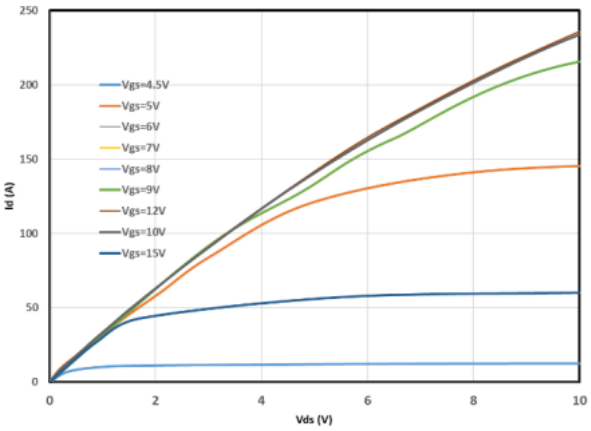
2：L = 50mH, VDD = 50V, RG = 25Ω, VG=10V, Starting TJ = 25°C

3：Pulse Test：Pulse Width ≤300μs,Duty Cycle≤2％

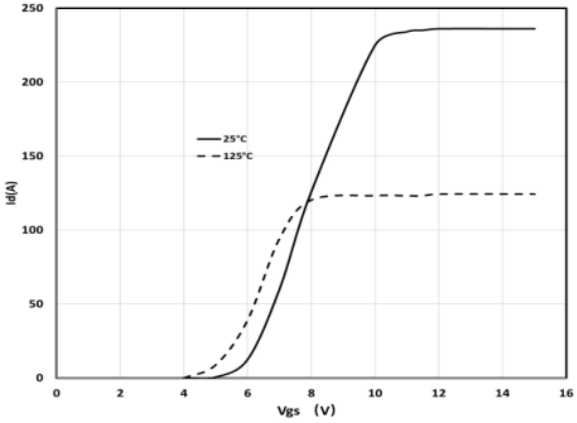
4：Essentially independent of operating temperature

特征曲线 ELECTRICAL CHARACTERISTICS (curves)

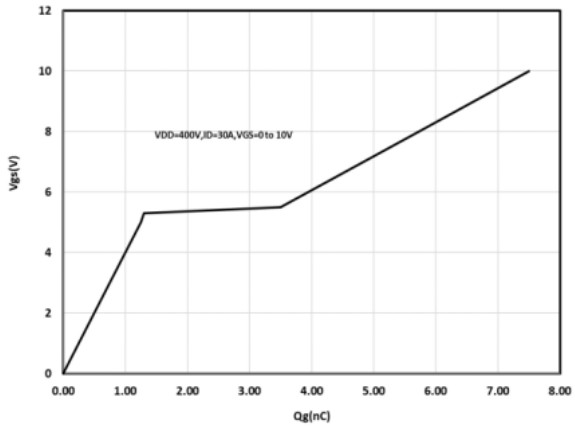
On-Region Characteristics



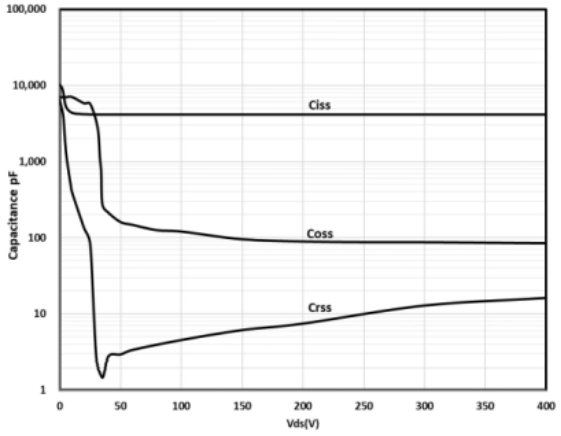
Transfer Characteristics



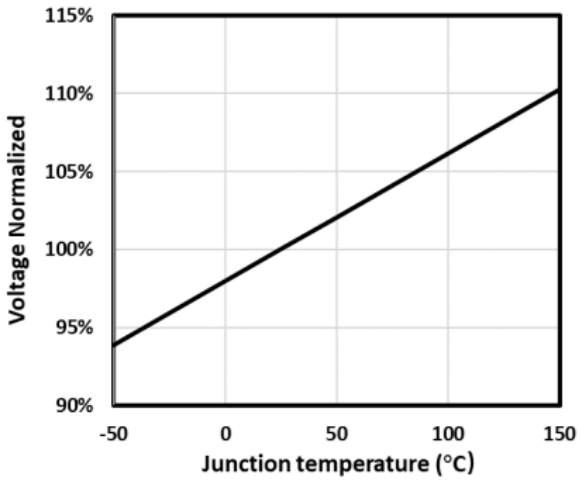
Gate Charge Characteristics



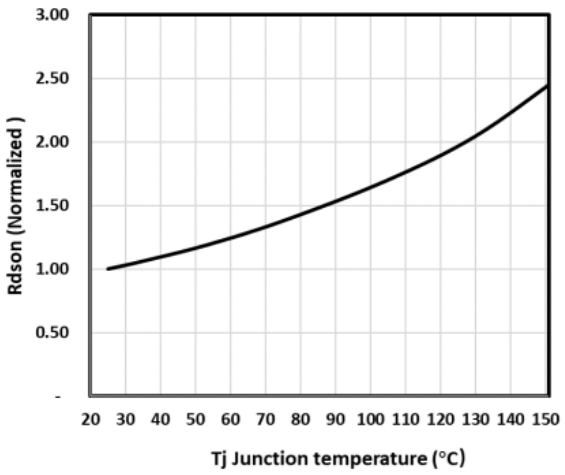
Capacitance Characteristics



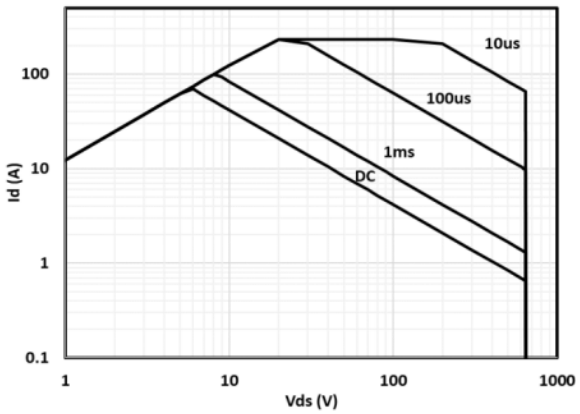
Breakdown Voltage Variation vs. Temperature



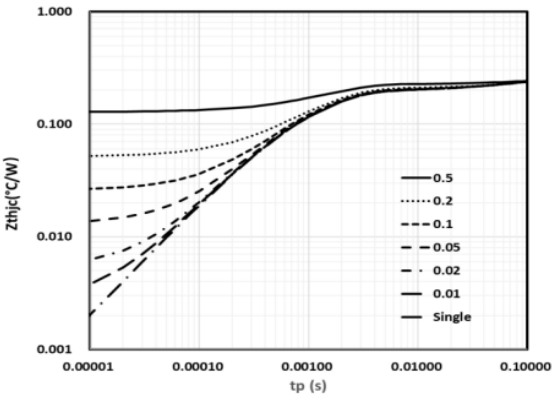
On-Resistance Variation vs. Temperature



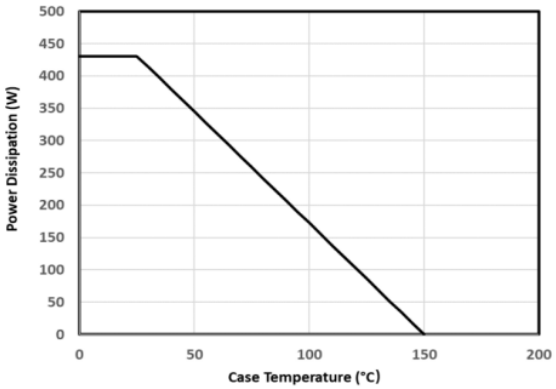
Maximum Safe Operating Area For MS65R037AR/TO-247



Transient Thermal Response Curve For MS65R037AR/TO-247



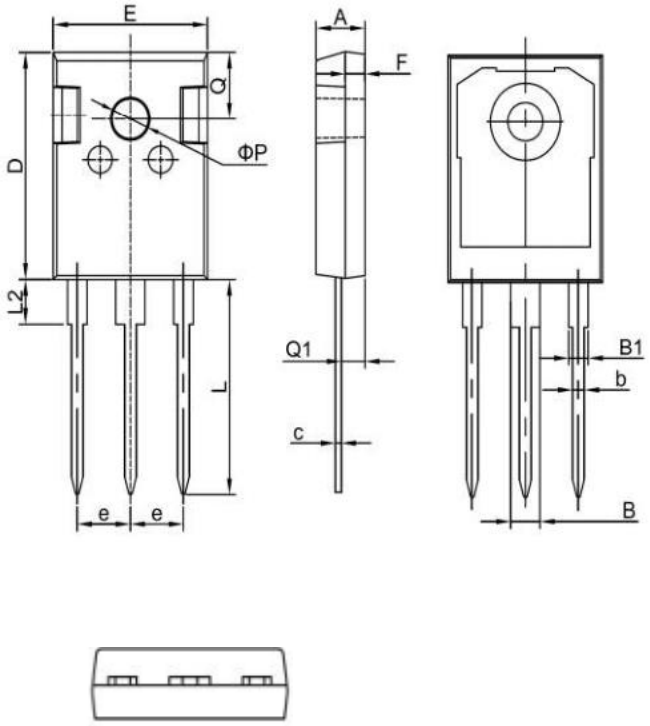
Power Disspation vs. Temperature



外形尺寸 PACKAGE MECHANICAL DATA

TO-247

单位 Unit：mm



符号 symbol	MIN	MAX
A	4.90	5.10
B	2.95	3.35
B1	1.95	2.35
b	1.15	1.35
c	0.50	0.70
D	20.90	21.10
E	15.70	15.90
e	5.34	5.54
F	1.90	2.10
L	19.40	20.40
L2	4.03	4.23
Q	6.00	6.40
Q1	2.30	2.50
P	3.50	3.70

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