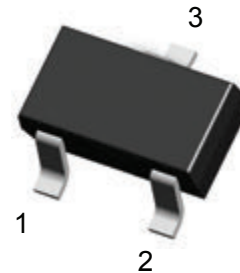


P-Channel Enhancement-Mode MOSFET (-20V, -9A)
KF3017A P-Channel -20V(D-S) MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$	I_D Max
-20V	17mΩ @ -4.5V	-9.0A
	19mΩ @ -2.5V	

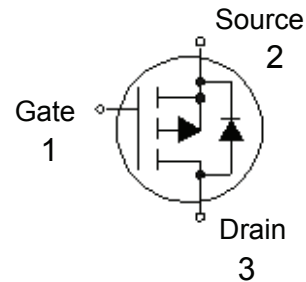
SOT-23-3L

 1.GATE
 2.SOURCE
 3.DRAIN

FEATURE

- TrenchFET Power MOSFET
- Excellent $R_{DS(on)}$
- Low Gate Charge
- High Power and Current Handling Capability
- Surface Mount Package

APPLICATION

- Load Switch
- Power Management


ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	I_D	-9	A
Pulsed Drain Current (note 1)	I_{DM}	-25	A
Thermal Resistance from Junction to Ambient (note 2)	$R_{\theta JA}$	100	$^\circ\text{C}/\text{W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~+150	$^\circ\text{C}$
Lead Temperature for Soldering Purposes(1/8" from case for 10 s)	T_L	260	$^\circ\text{C}$



MOSFET ELECTRICAL CHARACTERISTICS

T_a =25 °C unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC CHARACTERISTICS						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	- 20			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =-18V, V _{GS} = 0V			-500	nA
Gate-body leakage current	I _{GSS}	V _{GS} =±12V, V _{DS} = 0V			±100	nA
Gate threshold voltage (note 3)	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.5	-0.62	-1.0	V
Drain-source on-resistance (note 3)	R _{DS(on)}	V _{GS} =-4.5V, I _D =-6A	15	17	21	mΩ
		V _{GS} =-2.5V, I _D =-5A	17	19	30	mΩ
Forward transconductance (note 3)	g _{FS}	V _{DS} =-5V, I _D =-6A		17		S
Diode forward voltage (note 3)	V _{SD}	I _S =-2.0A, V _{GS} = 0V			-1.0	V
DYNAMIC CHARACTERISTICS (note4)						
Input Capacitance	C _{iss}	V _{DS} =-10V, V _{GS} =0V, f =1MHz		1687		pF
Output Capacitance	C _{oss}			350		pF
Reverse Transfer Capacitance	C _{rss}			260		pF
SWITCHING CHARACTERISTICS (note 4)						
Turn-on delay time	t _{d(on)}	V _{DD} =-10V, R _L =10Ω, V _{GS} =-4.5V, R _{GEN} =6Ω		25		ns
Turn-on rise time	t _r			30		ns
Turn-off delay time	t _{d(off)}			70		ns
Turn-off fall time	t _f			50		ns
Total Gate Charge	Q _g	V _{DS} =-10V, V _{GS} =-4.5V, I _D =-6A		17		nC
Gate-Source Charge	Q _{gs}			4.1		nC
Gate-Drain Charge	Q _{gd}			4.3		nC

Notes :

- 1.Repetitive rating: Pluse width limited by maximum junction temperature
- 2.Surface Mounted on FR4 board, t ≤ 10 sec.
3. Pulse test : Pulse width ≤ 300μs, duty cycle ≤ 2%.
4. Guaranteed by design, not subject to production.

Typical Electrical and Thermal Characteristics

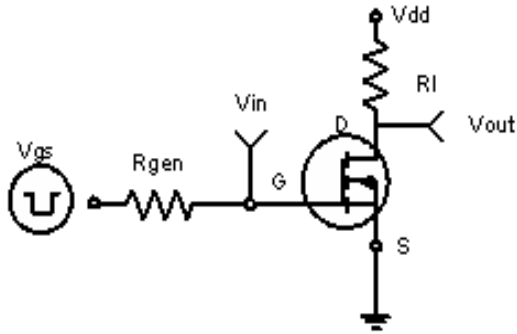


Figure 1 Switching Test Circuit

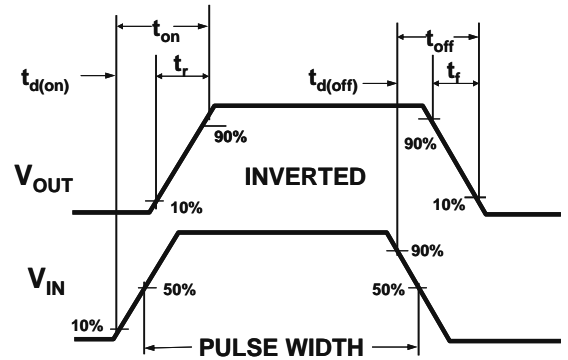


Figure 2 Switching Waveforms

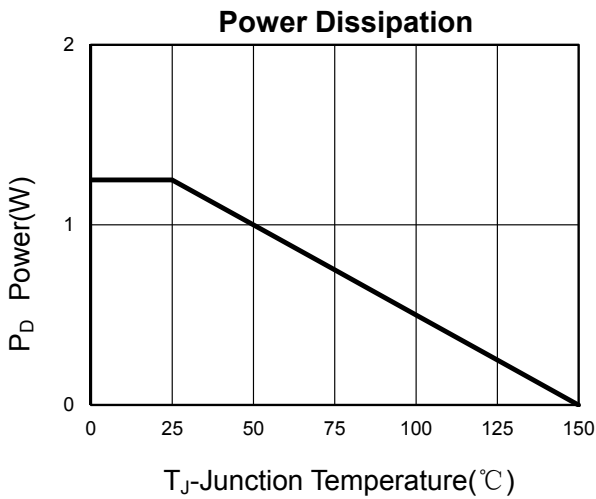


Figure 3 Power Dissipation

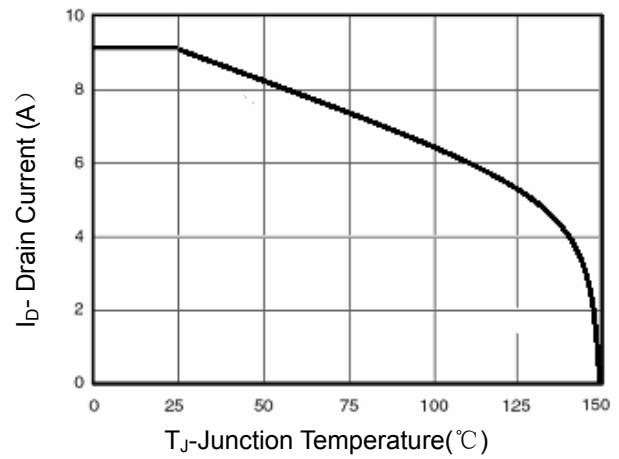


Figure 4 Drain Current

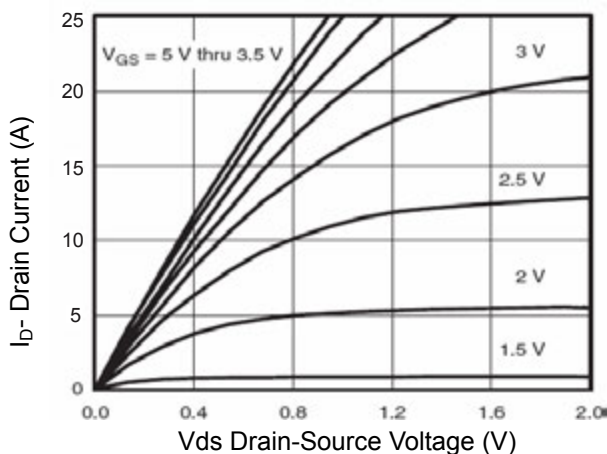


Figure 5 Output Characteristics

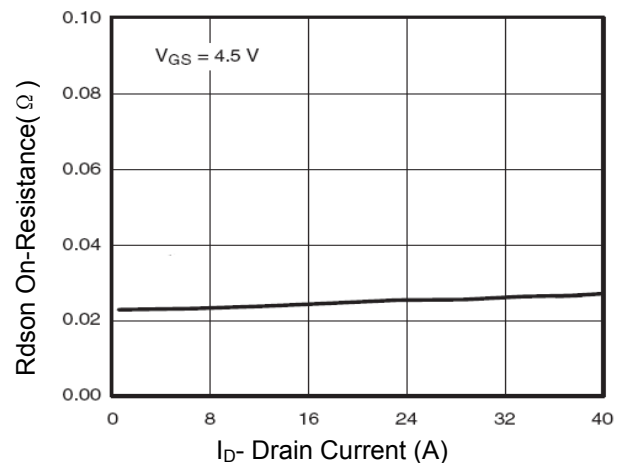
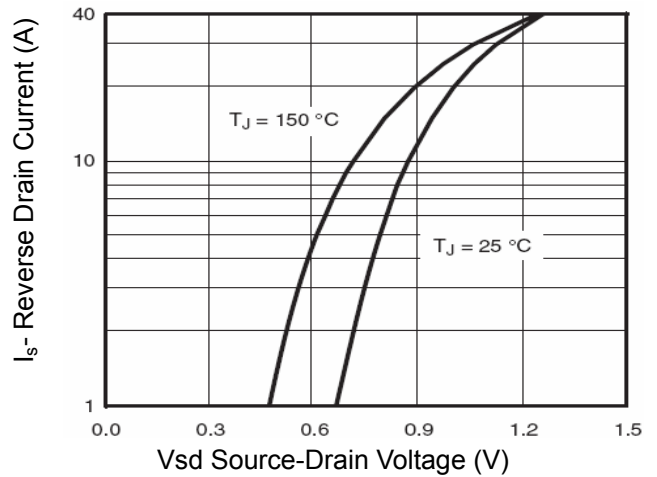
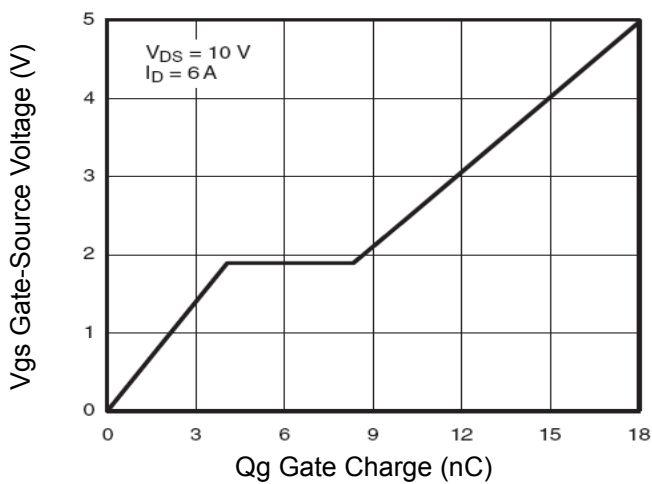
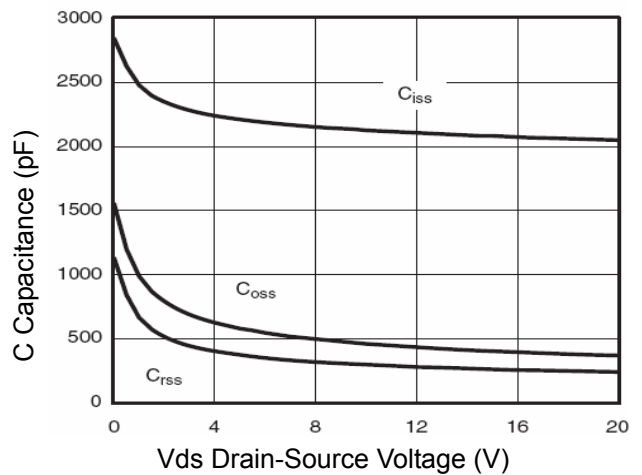
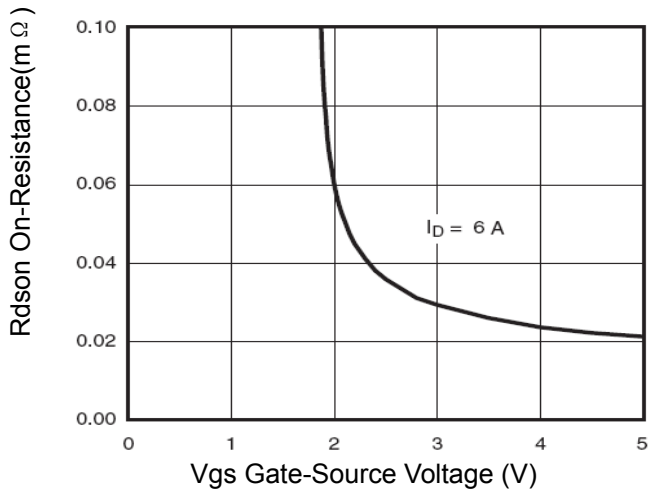
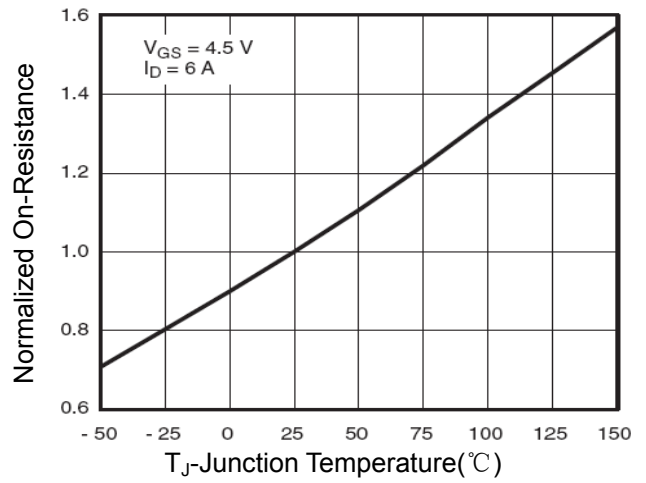
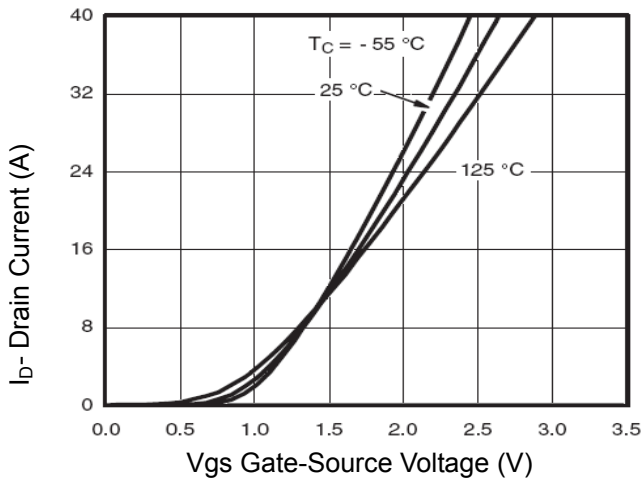


Figure 6 Drain-Source On-Resistance



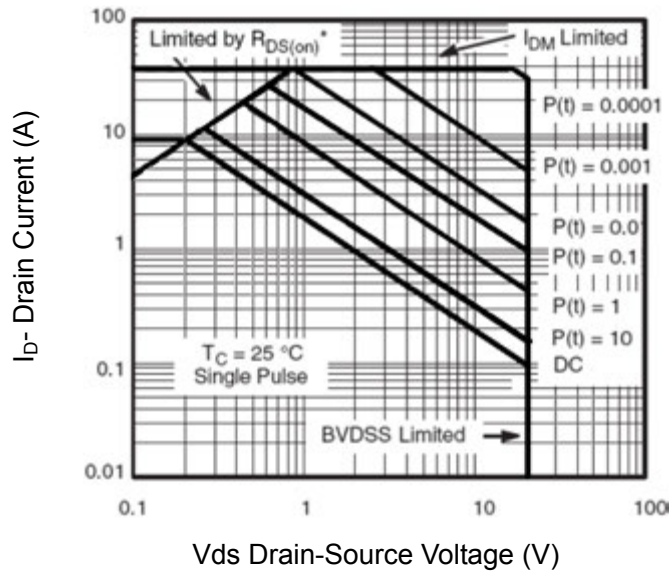


Figure 13 Safe Operation Area

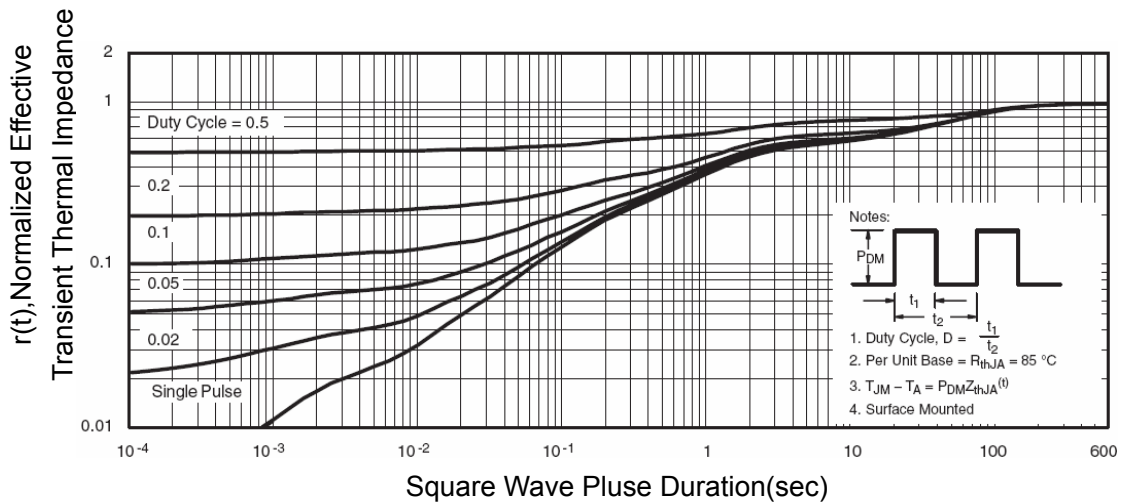
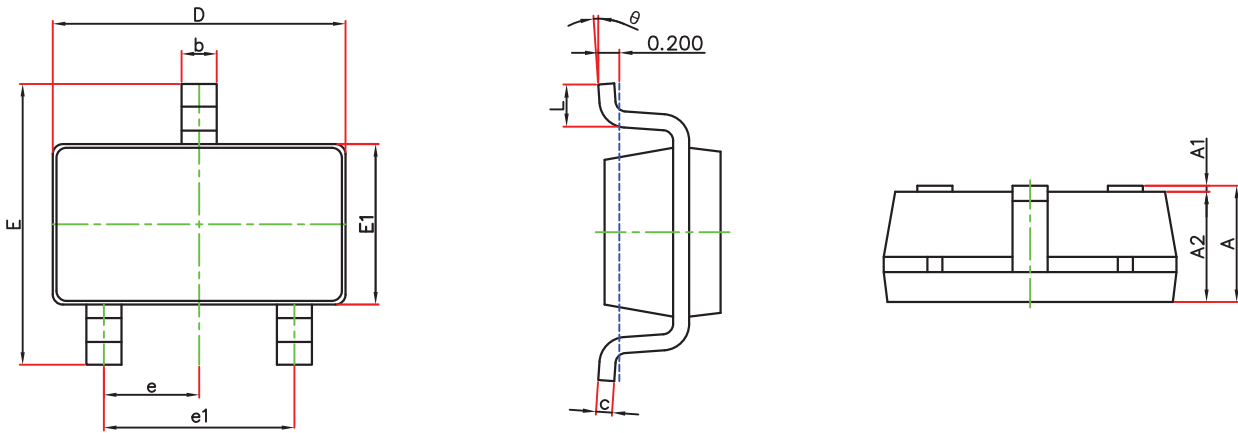


Figure 14 Normalized Maximum Transient Thermal Impedance

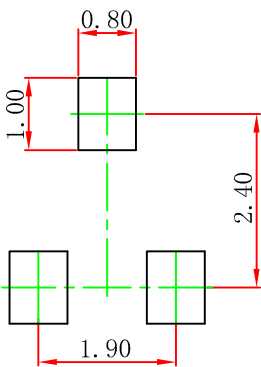


SOT-23-3L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

SOT-23-3L Suggested Pad Layout



Note:
 1. Controlling dimension: in millimeters.
 2. General tolerance: ±0.05mm.
 3. The pad layout is for reference purposes only.



责任及版权申明

深圳市科发鑫电子有限公司有权根据所提供的产品和服务进行更正、修改、增强、改进或其它更改，客户在下订单前应获取最新的相关信息，并验证这些信息是否完整且是最新的。所有产品的销售都遵循在订单确认时所提供的销售条款与条件。

深圳市科发鑫电子有限公司对应用帮助或客户产品设计不承担任何义务。客户应对其使用科发鑫的产品和应用自行负责。为尽量减小与客户产品和应用相关的风险，客户应提供充分的设计与操作安全验证。

客户认可并同意，尽管任何应用相关信息或支持仍可能由科发鑫提供，但他们将独力负责满足与其产品及在其应用中使用科发鑫产品相关的所有法律、法规和安全相关要求。客户声明并同意，他们具备制定与实施安全措施所需的全部专业技术和知识，可预见故障的危险后果、监测故障及其后果、降低有可能造成人身伤害的故障的发生机率并采取适当的补救措施。客户将全额赔偿因在此类关键应用中使用任何科发鑫产品而对科发鑫及其代理造成的任何损失。

对于科发鑫的产品手册或数据表，仅在没有对内容进行任何篡改且带有相关授权、条件、限制和声明的情况下才允许进行复制。科发鑫对此类篡改过的文件不承担任何责任或义务。复制第三方的信息可能需要服从额外的限制条件。

科发鑫会不定期更新本文档内容，产品实际参数可能因型号或者其他事项不同有所差异，本文档不作为任何明示或暗示的担保或授权

在转售科发鑫产品时，如果对该产品参数的陈述与科发鑫标明的参数相比存在差异或虚假成分，则会失去相关科发鑫产品的所有明示或暗示授权，且这是不正当的、欺诈性商业行为。科发鑫对任何此类虚假陈述均不承担任何责任或义务。