

# 2SK3337-01

FUJI POWER MOS-FET

## N-CHANNEL SILICON POWER MOS-FET

### Features

- High speed switching
- Low on-resistance
- No secondary breakdown
- Low driving power
- Avalanche-proof

### Applications

- Switching regulators
- UPS (Uninterruptible Power Supply)
- DC-DC converters

### Maximum ratings and characteristic Absolute maximum ratings

(T<sub>c</sub>=25°C unless otherwise specified)

Item	Symbol	Rating	Unit
Drain-source voltage	V <sub>DS</sub>	1000	V
Continuous drain current	I <sub>D</sub>	±7	A
Pulsed drain current	I <sub>D(puls)</sub>	±28	A
Gate-source voltage	V <sub>GS</sub>	±30	V
Repetitive or non-repetitive	IAR *2	7	A
Maximum Avalanche Energy	EAV *1	463	mJ
Max. power dissipation	P <sub>D</sub>	255	W
Operating and storage temperature range	T <sub>ch</sub> T <sub>stg</sub>	+150 -55 to +150	°C

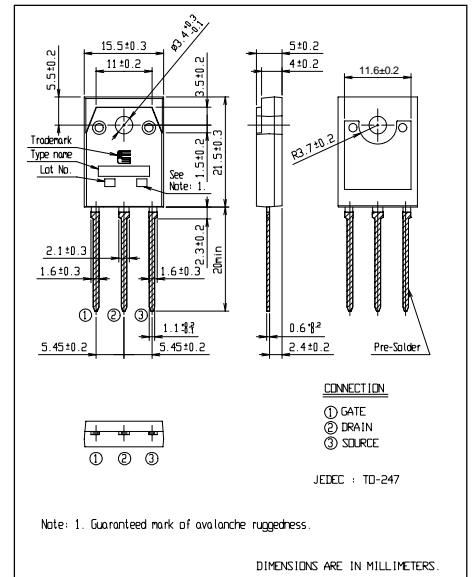
\*1 L=17.3mH, V<sub>cc</sub>=100V \*2 T<sub>ch</sub>≧150°C

### Electrical characteristics (T<sub>c</sub> =25°C unless otherwise specified)

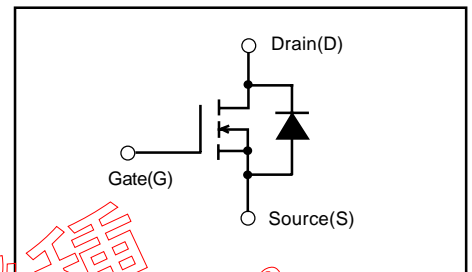
Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =1mA V <sub>GS</sub> =0V	100			V
Gate threshold voltage	V <sub>GS(th)</sub>	I <sub>D</sub> =1mA V <sub>DS</sub> =V <sub>GS</sub>	2.5	3.0	3.5	V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> =1000V V <sub>GS</sub> =0V	T <sub>ch</sub> =25°C	10	500	μA
			T <sub>ch</sub> =125°C	0.2	1.0	mA
Gate-source leakage current	I <sub>GSS</sub>	V <sub>GS</sub> =±30V V <sub>DS</sub> =0V		10	100	nA
Drain-source on-state resistance	R <sub>DS(on)</sub>	I <sub>D</sub> =3.5A V <sub>GS</sub> =10V		1.54	2.0	Ω
Forward transconductance	g <sub>fs</sub>	I <sub>D</sub> =3.5A V <sub>DS</sub> =25V	2.7	5.5		S
Input capacitance	C <sub>iss</sub>	V <sub>DS</sub> =25V		1480	2220	pF
Output capacitance	C <sub>oss</sub>	V <sub>GS</sub> =0V		170	255	
Reverse transfer capacitance	C <sub>rss</sub>	f=1MHz		75	113	
Turn-on time t <sub>on</sub>	t <sub>d(on)</sub> t <sub>r</sub>	V <sub>CC</sub> =600V I <sub>D</sub> =7A V <sub>GS</sub> =10V		25	38	ns
				50	75	
Turn-off time t <sub>off</sub>	t <sub>d(off)</sub> t <sub>f</sub>	R <sub>GS</sub> =10Ω		160	240	
				70	105	
Total gate charge	Q <sub>G</sub>	V <sub>CC</sub> =500V		84	126	nC
Gate-Source charge	Q <sub>GS</sub>	I <sub>D</sub> =7A		23	35	
Gate-Drain charge	Q <sub>GD</sub>	V <sub>GS</sub> =10V		31	47	
Avalanche capability	I <sub>AV</sub>	L=17.3 mH T <sub>ch</sub> =25°C	7			A
Diode forward on-voltage	V <sub>SD</sub>	I <sub>F</sub> =2I <sub>DR</sub> V <sub>GS</sub> =0V T <sub>ch</sub> =25°C		1.00	1.50	V
Reverse recovery time	t <sub>rr</sub>	I <sub>F</sub> =I <sub>DR</sub> V <sub>GS</sub> =0V		1.6		μs
Reverse recovery charge	Q <sub>rr</sub>	-di/dt=100A/μs T <sub>ch</sub> =25°C		15.0		μC

### Thermal characteristics

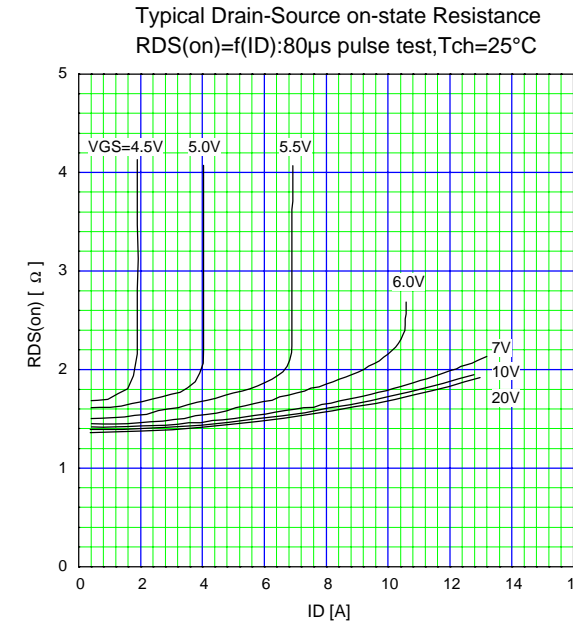
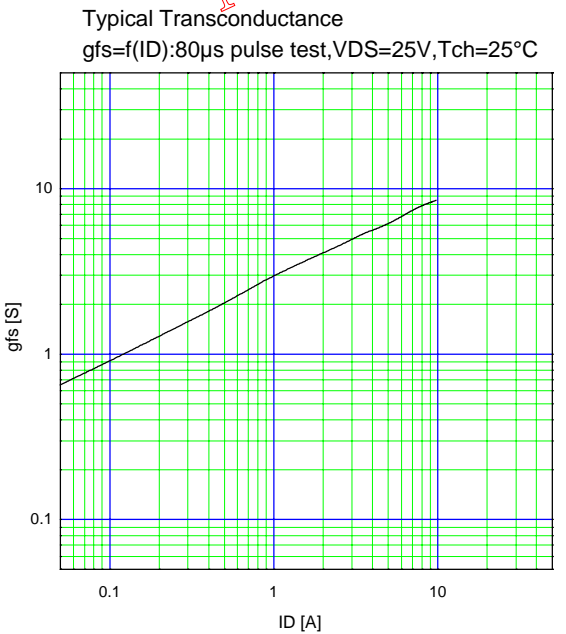
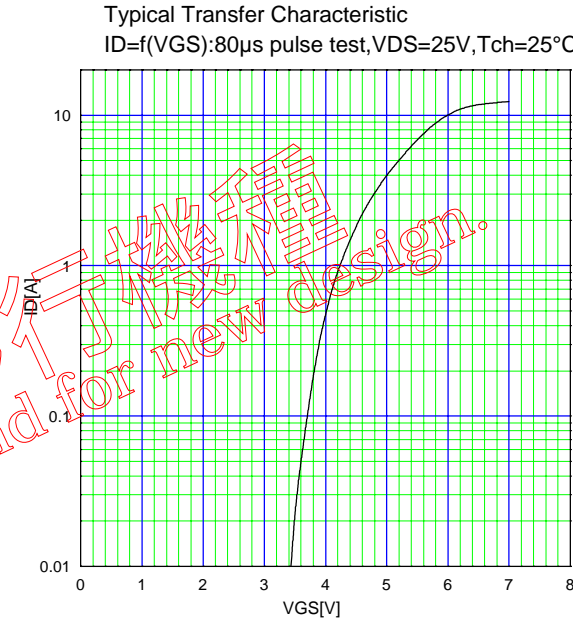
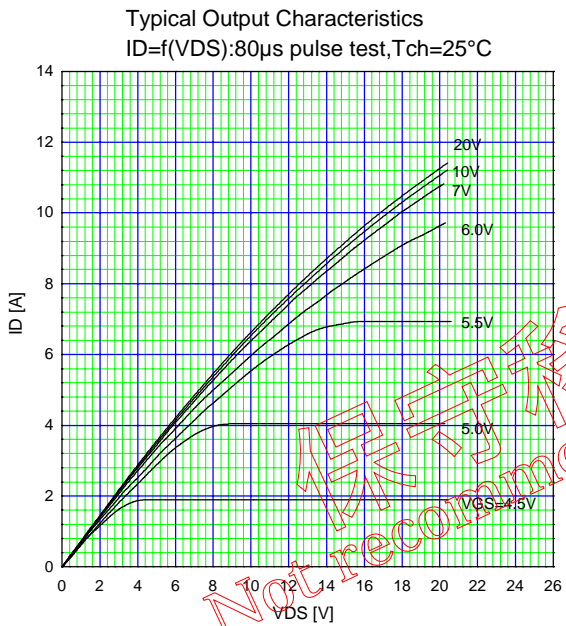
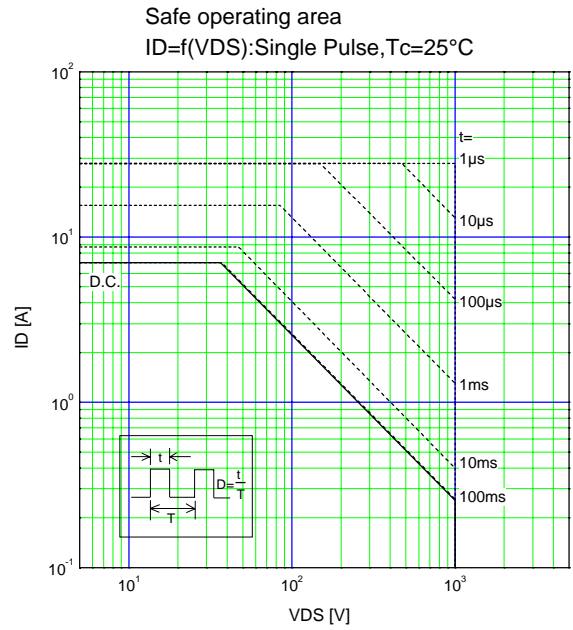
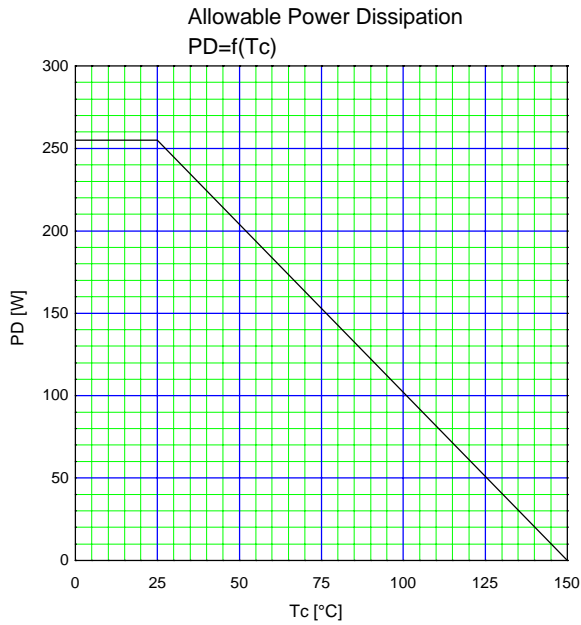
Item	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal resistance	R <sub>th(ch-c)</sub>	channel to case			0.490	°C/W
	R <sub>th(ch-a)</sub>	channel to ambient			50.0	°C/W



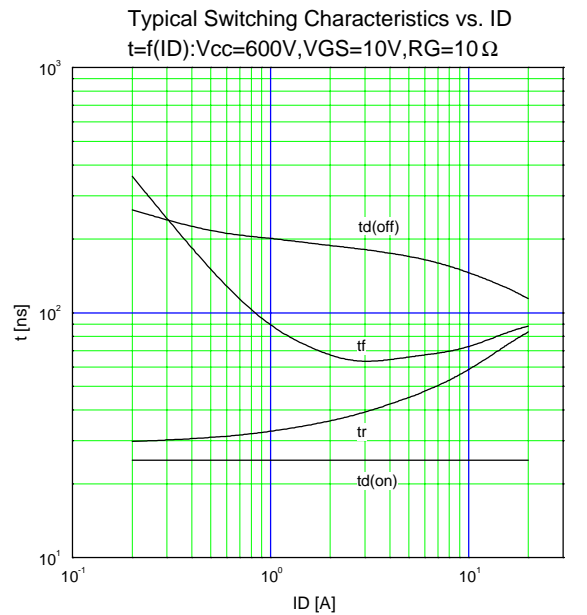
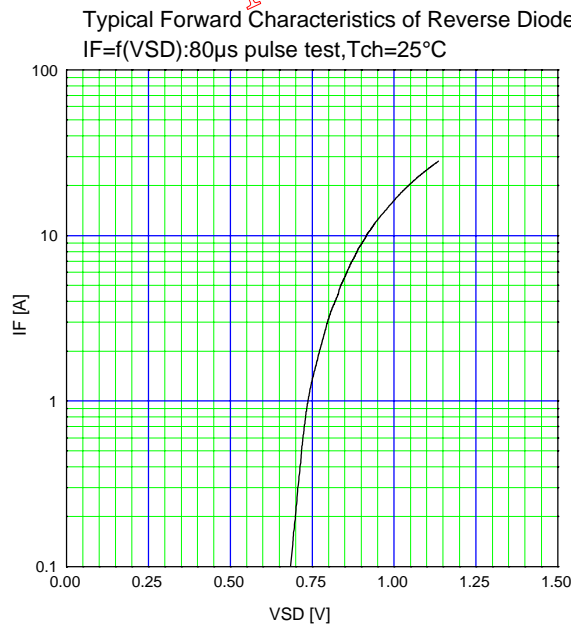
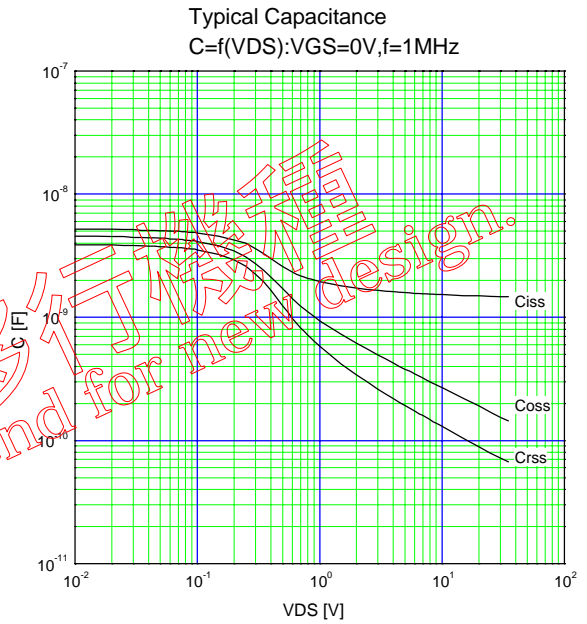
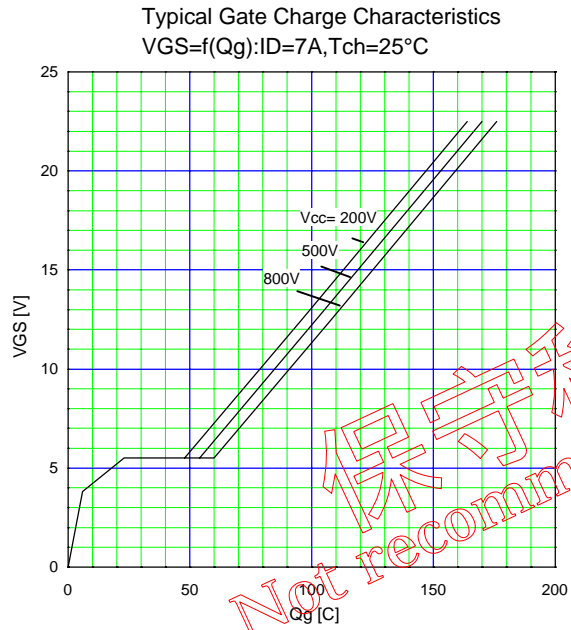
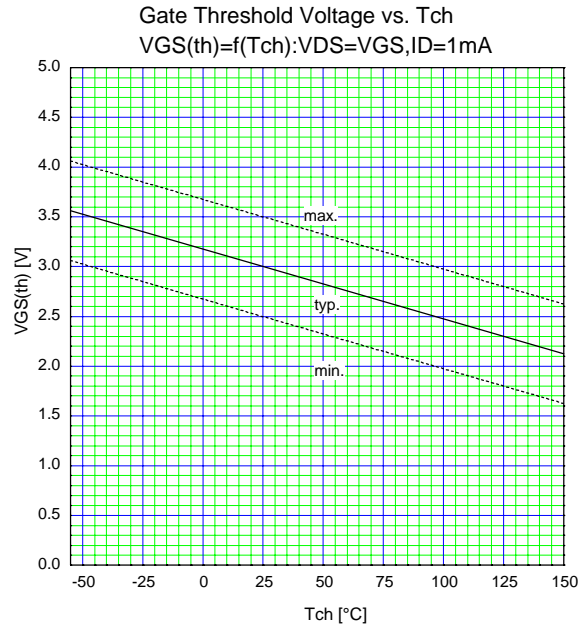
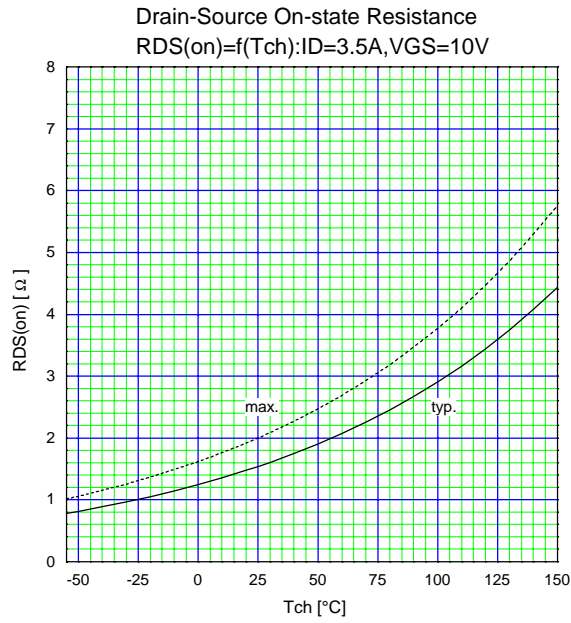
### Equivalent circuit schematic



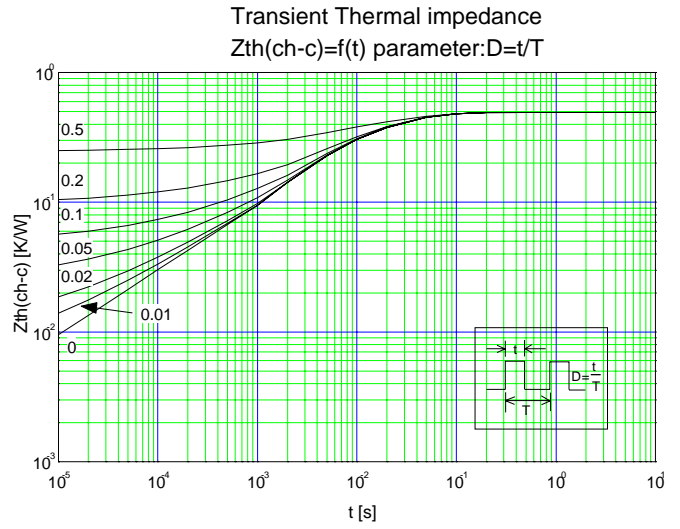
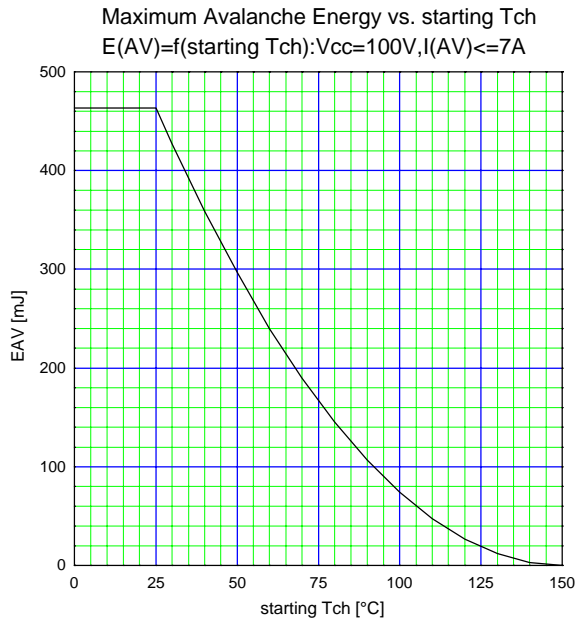
Characteristics



富士電機株式会社  
 FUJIELECTRIC CO., LTD.  
 Not recommend for new design.



保持移行技術  
 Not recommend for new design.



保守移行機種  
 Not recommend for new design.