

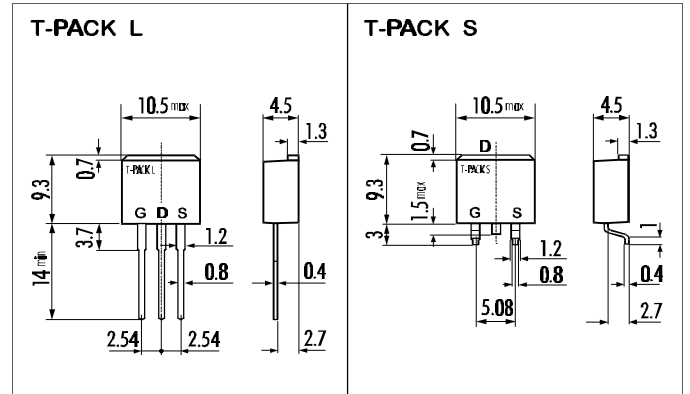
> Features

- High Speed Switching
- Low On-Resistance
- No Secondary Breakdown
- Low Driving Power
- High Voltage

> Applications

- Switching Regulators
- UPS
- DC-DC Converters
- General Purpose Power Amplifier

> Outline Drawing

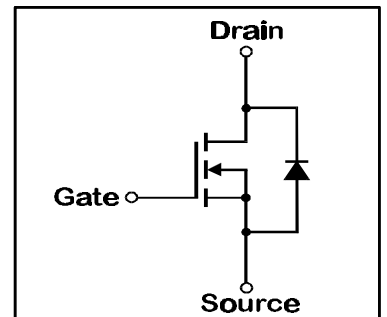


> Maximum Ratings and Characteristics

- Absolute Maximum Ratings (T_C=25°C), unless otherwise specified

Item	Symbol	Rating	Unit
Drain-Source-Voltage	V _{DS}	800	V
Continuous Drain Current	I _D	3	A
Pulsed Drain Current	I _{D(puls)}	12	A
Continuous Reverse Drain Current	I _{DR}	3	A
Gate-Source-Voltage	V _{GS}	±20	V
Max. Power Dissipation	P _D	80	W
Operating and Storage Temperature Range	T _{ch}	150	°C
	T _{stg}	-55 ~ +150	°C

> Equivalent Circuit



- Electrical Characteristics (T_C=25°C), unless otherwise specified

Item	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown-Voltage	V _{(BR)DSS}	I _D =1mA V _{GS} =0V	800			V
Gate Threshold Voltage	V _{GS(th)}	I _D =10mA V _{DS} =V _{GS}	2,1	3,0	4,0	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =800V T _{ch} =25°C		0,01	0,5	mA
		V _{GS} =0V T _{ch} =125°C		0,2	1,0	mA
Gate Source Leakage Current	I _{GSS}	V _{GS} =±20V V _{DS} =0V		10	100	nA
Drain Source On-State Resistance	R _{DS(on)}	I _D =1,5A V _{GS} =10V		3	4	Ω
Forward Transconductance	g _{fs}	I _D =1,5A V _{DS} =25V	2	4		S
Input Capacitance	C _{iss}	V _{DS} =25V		900	1400	pF
Output Capacitance	C _{oss}	V _{GS} =0V		90	140	pF
Reverse Transfer Capacitance	C _{rss}	f=1MHz		35	60	pF
Turn-On-Time t _{on} (t _{on} =t _{d(on)} +t _r)	t _{d(on)}	V _{CC} =30V		20	30	ns
	t _r	I _D =2,1A		40	60	ns
Turn-Off-Time t _{off} (t _{off} =t _{d(off)} +t _f)	t _{d(off)}	V _{GS} =10V		150	250	ns
	t _f	R _{GS} =50Ω		60	90	ns
Diode Forward On-Voltage	V _{SD}	I _F =2I _{DR} V _{GS} =0V T _{ch} =25°C		1	1,35	V
Reverse Recovery Time	t _{rr}	I _F =I _{DR} V _{GS} =0V -dI _F /dt=100A/μs T _{ch} =25°C		400		ns

- Thermal Characteristics

Item	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Thermal Resistance	R _{th(ch-a)}	channel to air			125	°C/W
	R _{th(ch-c)}	channel to case			1,56	°C/W

N-channel MOS-FET			
800V	4Ω	3A	80W

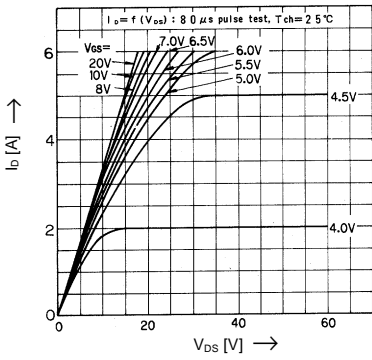
2SK1663-L,S

F-I Series

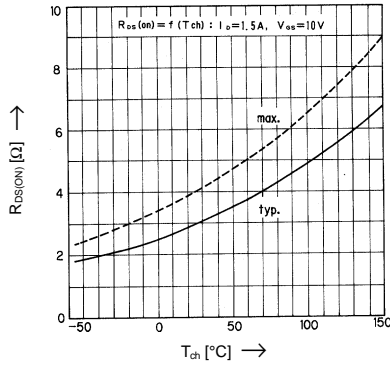


> Characteristics

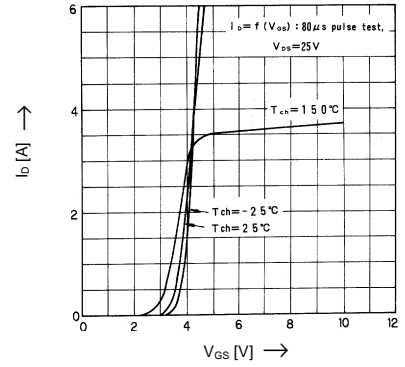
Typical Output Characteristics



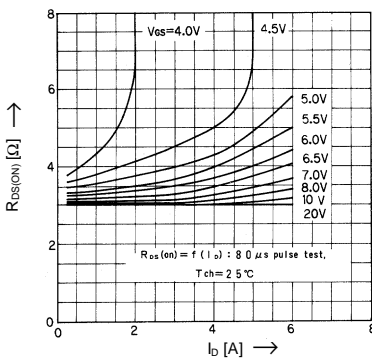
Drain-Source-On-State Resistance vs. Tch



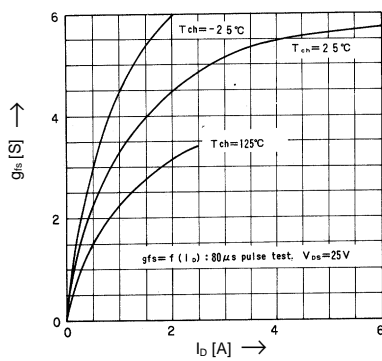
Typical Transfer Characteristics



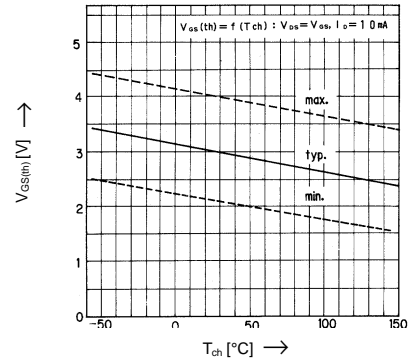
Typical Drain-Source-On-State-Resistance vs. Id



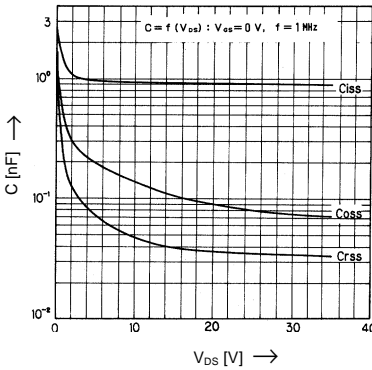
Typical Forward Transconductance vs. Id



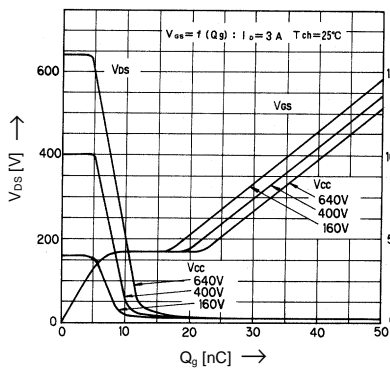
Gate Threshold Voltage vs. Tch



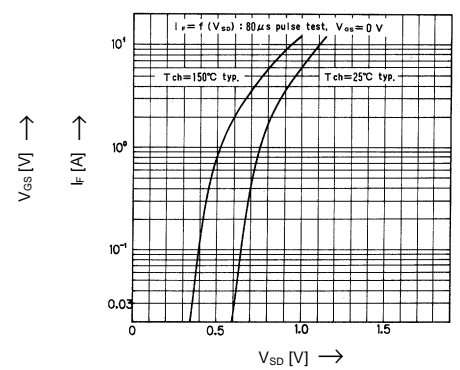
Typical Capacitance vs. Vds



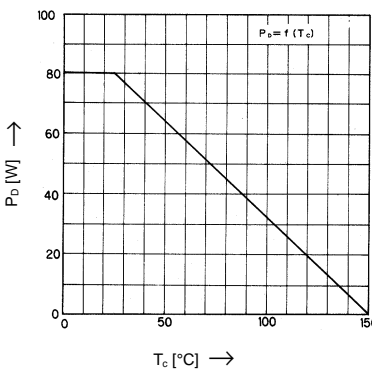
Typical Input Charge



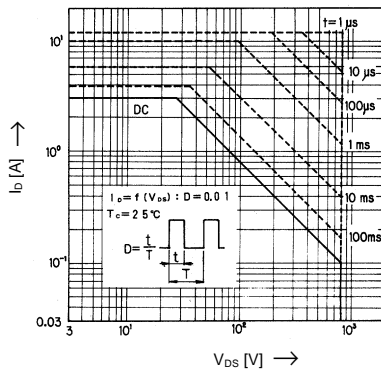
Forward Characteristics of Reverse Diode



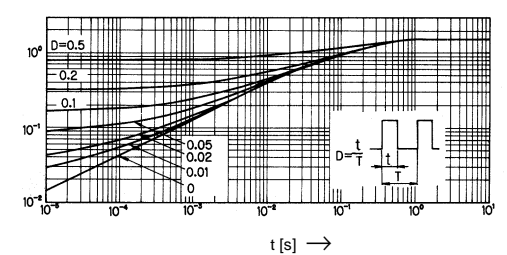
Allowable Power Dissipation vs. Tch



Safe operation area



Transient Thermal Impedance





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