

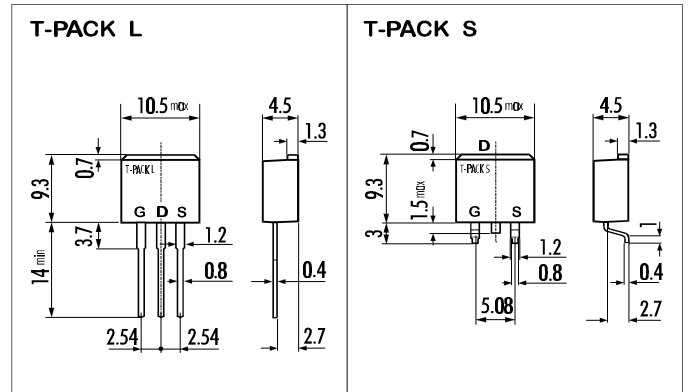
> Features

- High Current
- Low On-Resistance
- No Secondary Breakdown
- Low Driving Power
- High Forward Transconductance

> Applications

- Motor Control
- General Purpose Power Amplifier
- DC-DC converters

> Outline Drawing

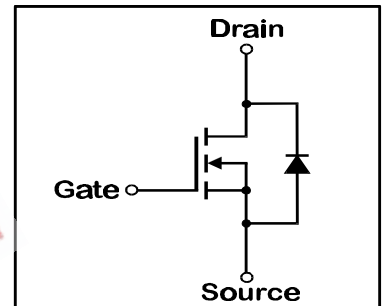


> Maximum Ratings and Characteristics

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

Item	Symbol	Rating	Unit
Drain-Source-Voltage	V _{DS}	100	V
Drain-Gate-Voltage (R _{GS} =20KΩ)	V _{DGR}	100	V
Continous Drain Current	I _D	30	A
Pulsed Drain Current	I _{D(puls)}	120	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

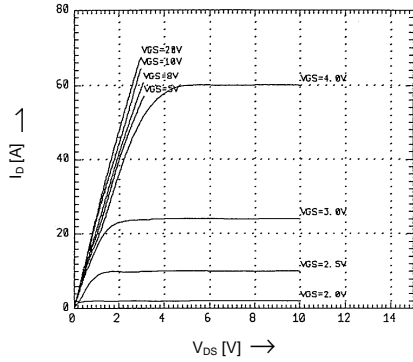
Item	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown-Voltage	V _{(BR)DSS}	I _D =1mA V _{GS} =0V	100			V
Gate Threshold Voltage	V _{GS(th)}	I _D =1mA V _{DS} =V _{GS}	1,0	1,5	2,5	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =100V T _{ch} =25°C		10	500	μA
		V _{GS} =0V T _{ch} =125°C		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 =15A V _{GS} =4V		0,04	0,07	Ω
		I _D =15A V _{GS} =10V		0,03	0,055	Ω
Forward Transconductance	g _{fs}	I _D =15A V _{DS} =25V	15	30		S
Input Capacitance	C _{iss}	V _{DS} =25V		2500	3700	pF
Output Capacitance	C _{oss}	V _{GS} =0V		500	750	pF
Reverse Transfer Capacitance	C _{rss}	f=1MHz		250	380	pF
Turn-On-Time t _{on} (t _{on} =t _{d(on)} +t _r)	t _{d(on)}	V _{CC} =30V I _D =30A		20	30	ns
			t _r		140	210
Turn-Off-Time t _{off} (t _{off} =t _{d(off)} +t _f)	t _{d(off)}	V _{GS} =10V R _{GS} =25Ω		500	750	ns
			t _f		260	390
Diode Forward On-Voltage	V _{SD}	I _F =2I _{DR} V _{GS} =0V T _{ch} =25°C		0,9	1,5	V
Reverse Recovery Time	t _{rr}	I _F =I _{DR} V _{GS} =0V		130		ns
Reverse Recovery Charge	Q _{rr}	-dI _F /dt=100A/μs T _{ch} =25°C		1,0		μC

- Thermal Characteristics

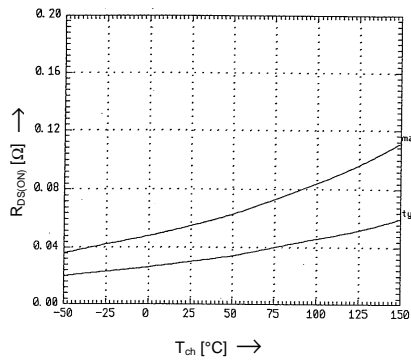
	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Thermal Resistance	R _{th(ch-a)}	channel to air			125	°C/W
	R _{th(ch-c)}	channel to case			1,56	°C/W

> Characteristics

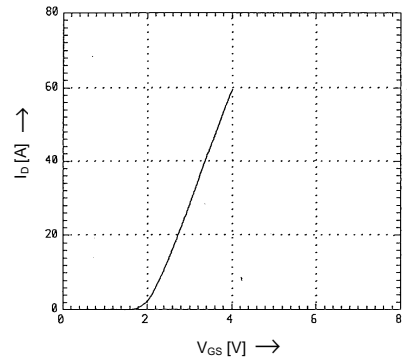
Typical Output Characteristics
 $I_D=f(V_{DS}); I_D=80\mu s$ pulse test; $T_C=25^\circ C$



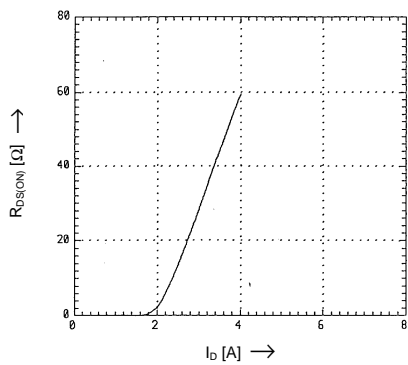
Drain-Source On-State Resistance vs. T_{ch}
 $R_{DS(on)} = f(T_{ch}); I_D=15A; V_{GS}=10V$



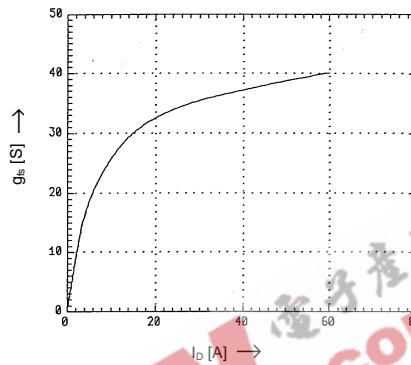
Typical Transfer Characteristics
 $I_D=f(V_{GS}); I_D=80\mu s$ pulse test; $V_{DS}=25V; T_{ch}=25^\circ C$



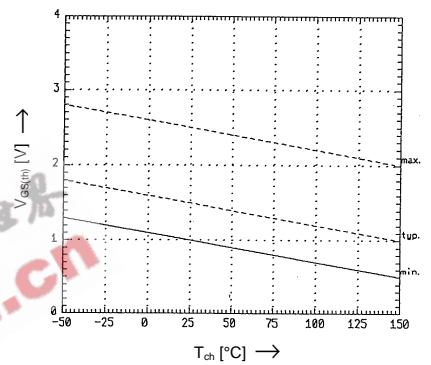
Typical Drain-Source On-State-Resistance vs. I_D
 $R_{DS(on)}=f(I_D); 80\mu s$ pulse test; $T_C=25^\circ C$



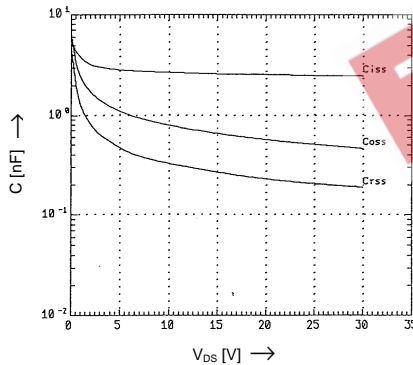
Typical Transconductance
 $g_m=f(I_D); 80\mu s$ pulse test; $V_{DS}=25V; T_{ch}=25^\circ C$



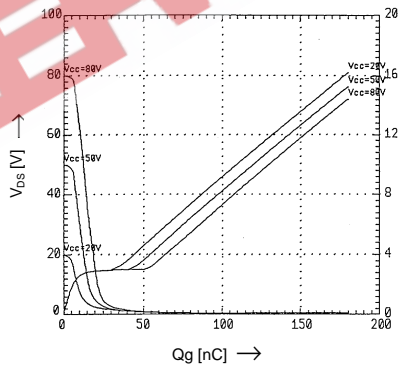
Gate Threshold Voltage
 $V_{GS(th)}=f(T_{ch}); I_D=1mA; V_{DS}=V_{GS}$



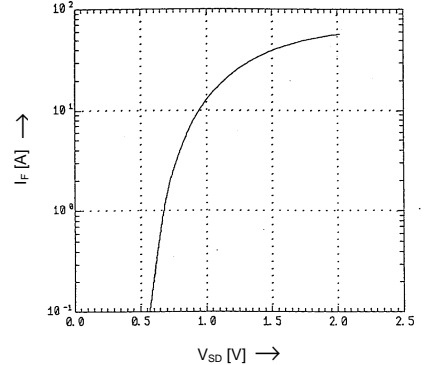
Typical Capacitances
 $C=f(V_{DS}); V_{GS}=0V; f=1MHz$



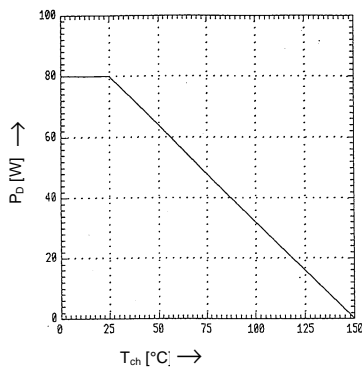
Typical Gate Charge Characteristic
 $V_{GS}=f(Q_g); I_D=30A$



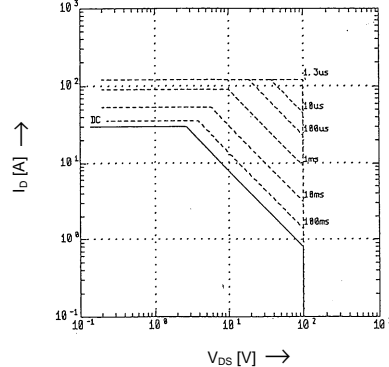
Forward Characteristics of Reverse Diode
 $I_F=f(V_{SD}); 80\mu s$ pulse test; $V_{GS}=0V$



Power Dissipation
 $P_D=f(T_C)$



Safe Operation Area
 $I_D=f(V_{DS}); D=0,01; T_C=25^\circ C$



$Z_{th(ch-c)} [K/W]$

Transient Thermal Impedance
 $Z_{th(ch-c)}=f(t)$ parameter: $D=t/T$

