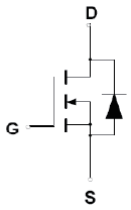
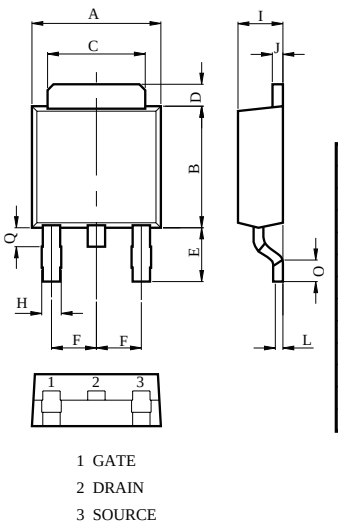
N-Channel MOSFET

DESCRIPTION

The FTK4828D uses advancd trench technology to provide excellent $R_{DS(ON)}$ and low gate charge.
This device is suitable for use as a load switch
or in PWM applications.





DIM	MILLIMETERS
A	6 50 ± 0 2
B	5 60 ± 0 2
C	5 20 ± 0 2
D	1 50 ± 0 2
E	2 70 ± 0 2
F	2 30 ± 0 1
H	1 00 MAX
I	2 30 ± 0 2
J	0 5 ± 0 1
L	0 50 ± 0 10
O	1 6 ± 0 2
Q	0 95 MAX

1 GATE
2 DRAIN
3 SOURCE

D-PAK (TO-252)

ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

Parameter	Symbol	Value	Units
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current (t ≤10s) (note 1)	I_D	12	A
Power Dissipation	P_C	1.25	W
Thermal Resistance from Junction to Ambient (t ≤10s) (note 1)	$R_{\theta JA}$	100	℃/W
Power Dissipation (T_C=25℃)	P_C	12.5	W
Thermal Resistance from Junction to Case (t ≤10s) (note 1)	$R_{\theta JC}$	10	℃/W
Avalanche Current (note 2)	I_{AR},I_{AS}	19	A
Repetitive Avalenche Energy 0.1mH (note 2)	E_{AR},E_{AS}	18	mJ
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

Electrical characteristics (T_a=25℃ unless otherwise noted)

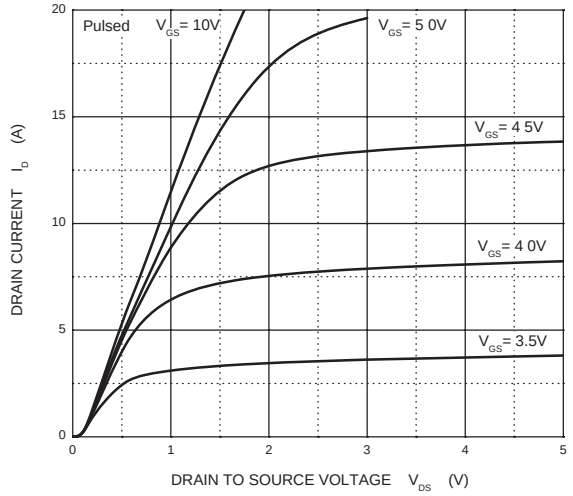
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC PARAMETERS						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	60			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =60V,V_{GS} = 0V			1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±100	nA
Gate threshold voltage (note 3)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1		3	V
Drain-source on-resistance (note 3)	$R_{DS(on)}$	V_{GS} =10V, I_D =4.5A			56	mΩ
		V_{GS} =4.5V, I_D =3A			77	mΩ
Forward tranconductance (note 3)	g_{FS}	V_{DS} =5V, I_D =4.5A	4			S
Diode forward voltage (note 3)	V_{SD}	I_S=1A, V_{GS} = 0V			1	V
DYNAMIC PARAMETERS (note 4)						
Input Capacitance	C_{iss}	V_{DS} =30V,V_{GS} =0V,f =1MHz			540	pF
Output Capacitance	C_{oss}			60		pF
Reverse Transfer Capacitance	C_{rss}			25		pF
SWITCHING PARAMETERS (note 4)						
Turn-on delay time	$t_{d(on)}$	V_{GS}=10V,V_{DS}=30V, R_L=6.7Ω,R_{GEN}=3Ω		4.7		ns
Turn-on rise time	t_r			2.3		ns
Turn-off delay time	$t_{d(off)}$			15.7		ns
Turn-off fall time	t_f			1.9		ns
Total Gate Charge (10V)	Q_g	V_{DS} =30V,V_{GS} =10V,I_D =4.5A			10.5	nC
Total Gate Charge (4.5V)					5.5	nC
Gate-Source Charge	Q_{gs}			1.6		nC
Gate-Drain Charge	Q_{gd}			2.2		nC

Notes :

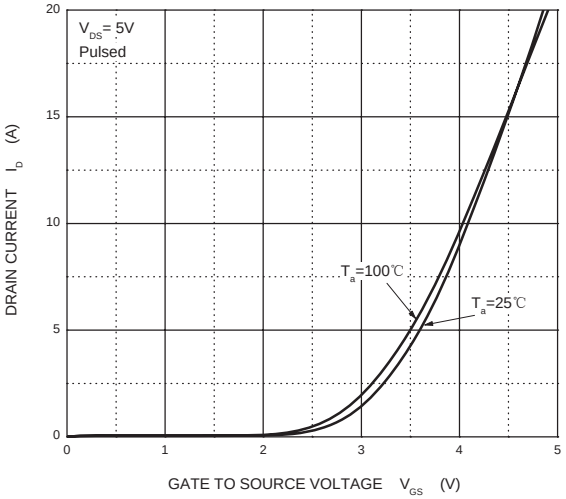
1. The value in any given application depends on the user's specific board design.
2. Repetitive rating : Pulse width limited by junction temperature.
3. Pulse Test : Pulse Width≤300μs, Duty Cycle≤0.5%.
4. These parameters have no way to verify.

Typical Characteristics

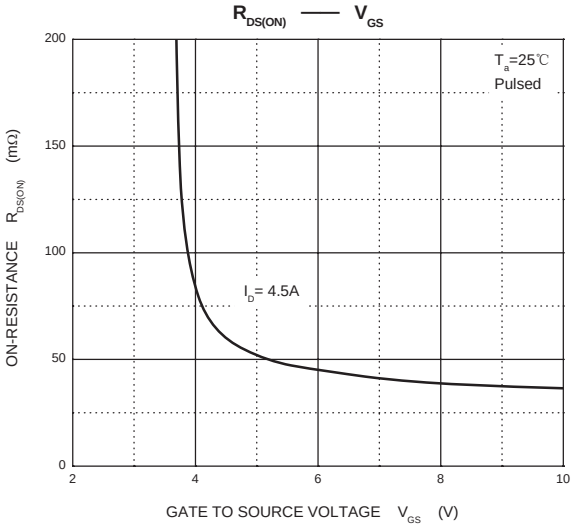
Output Characteristics



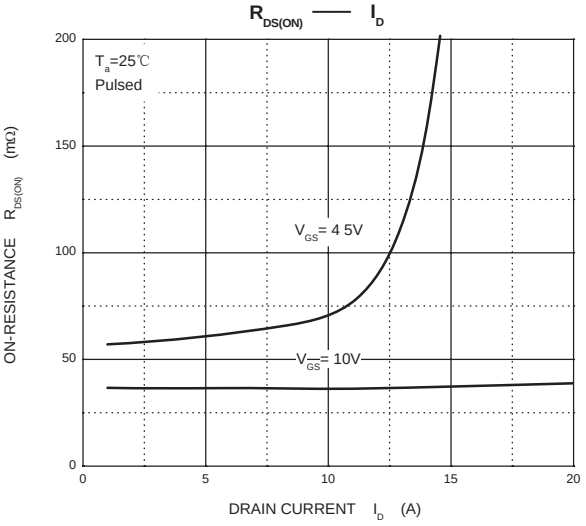
Transfer Characteristics



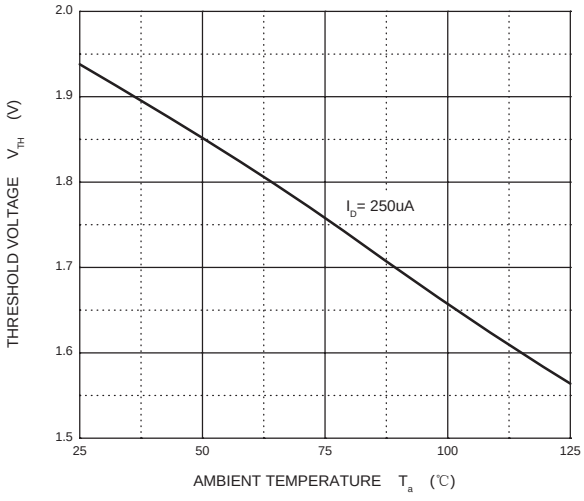
$R_{DS(ON)}$ — V_{GS}



$R_{DS(ON)}$ — I_D



Threshold Voltage



I_S — V_{SD}