

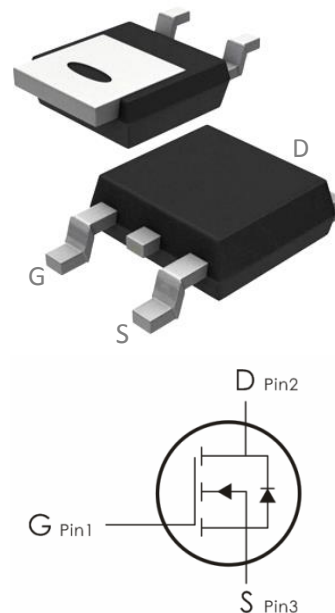
Description:

This N-Channel MOSFET uses advanced trench technology and design to provide excellent $R_{DS(on)}$ with low gate charge.

It can be used in a wide variety of applications.

Features:

- 1) $V_{DS}=60V, I_D=75A, R_{DS(on)} < 11.5m\Omega @ V_{GS}=10V$
- 2) Low gate charge.
- 3) Green device available.
- 4) Advanced high cell density trench technology for ultra $R_{DS(on)}$.
- 5) Excellent package for good heat dissipation.



Absolute Maximum Ratings: ($T_C=25^\circ C$ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current- $T_C=25^\circ C$	75	A
	Continuous Drain Current- $T_C=100^\circ C$	50	
	Pulsed Drain Current	300	
E_{AS}	Single Pulse Avalanche Energy ⁵	450	mJ
P_D	Power Dissipation	110	W
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +175	$^\circ C$

Thermal Characteristics:

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance, Junction to Case ²	1.36	$^\circ C/W$

Package Marking and Ordering Information:

Part NO.	Marking	Package
FKD6032	D6032	TO-252

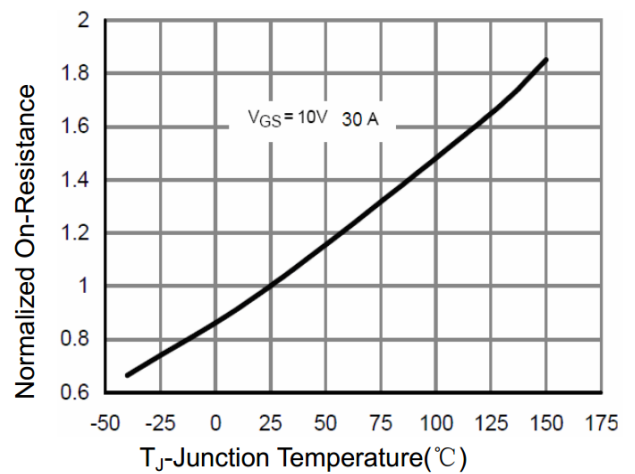
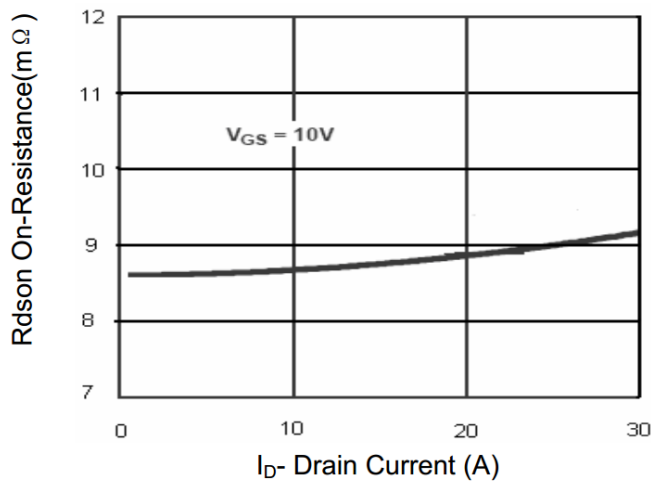
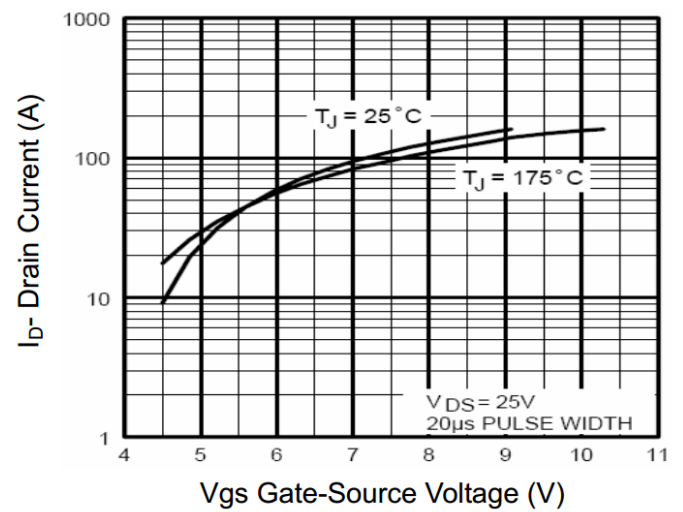
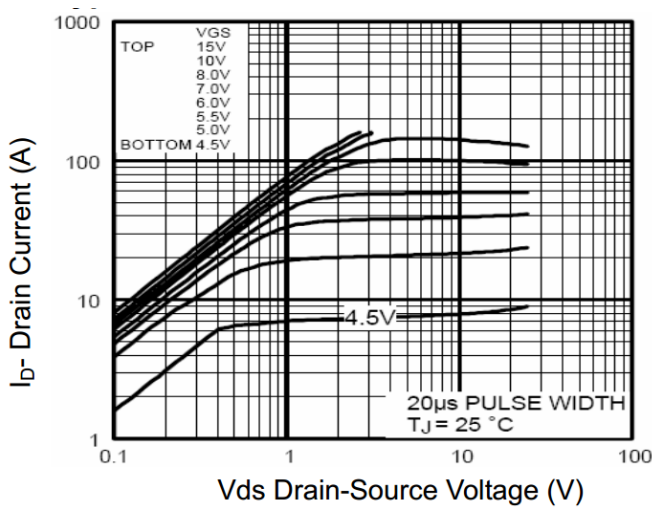
Electrical Characteristics: ($T_C=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250 μ A	60	68	---	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{GS} =0V, V _{DS} =60V	---	---	1	μ A
I _{GSS}	Gate-Source Leakage Current	V _{GS} =± 20V, V _{DS} =0A	---	---	± 100	nA
On Characteristics ³						
V _{GS(th)}	GATE-Source Threshold Voltage	V _{GS} =V _{DS} , I _D =250 μ A	2	3	4	V
R _{DS(ON)}	Drain-Source On Resistance	V _{GS} =10V, I _D =30A	---	9.1	11.5	m Ω
G _{FS}	Forward Transconductance	V _{DS} =25V, I _D =30A	20	---	---	S
Dynamic Characteristics ⁴						
C _{iss}	Input Capacitance	V _{DS} =25V, V _{GS} =0V, f=1MHz	---	2350	---	pF
C _{oss}	Output Capacitance		---	237	---	
C _{rss}	Reverse Transfer Capacitance		---	205	---	
Switching Characteristics ⁴						
t _{d(on)}	Turn-On Delay Time	V _{DD} =30V, I _D =2A, R _L =15Ω V _{GS} =10V, R _G =2.5Ω	---	16	---	ns
t _r	Rise Time		---	10	---	ns
t _{d(off)}	Turn-Off Delay Time		---	45	---	ns
t _f	Fall Time		---	12	---	ns
Q _g	Total Gate Charge	V _{GS} =10V, V _{DS} =30V, I _D =30A	---	50	---	nC
Q _{gs}	Gate-Source Charge		---	12	---	nC
Q _{gd}	Gate-Drain “Miller” Charge		---	16	---	nC
Drain-Source Diode Characteristics						
V _{SD}	Source-Drain Diode Forward Voltage ³	V _{GS} =0V, I _S =30A	---	---	1.2	V

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, $t \leq 10$ sec.
3. Pulse Test: Pulse Width $\leq 300 \mu s$, Duty Cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production
5. EAS condition : $T_J = 25^\circ C$, $V_{DD} = 30V$, $V_G = 10V$, $L = 0.5mH$, $R_g = 25\Omega$.

Typical Characteristics: ($T_C = 25^\circ C$ unless otherwise noted)



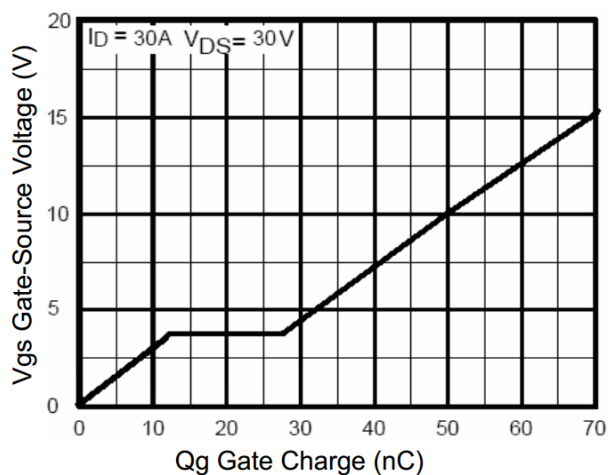


Figure 5 Gate Charge

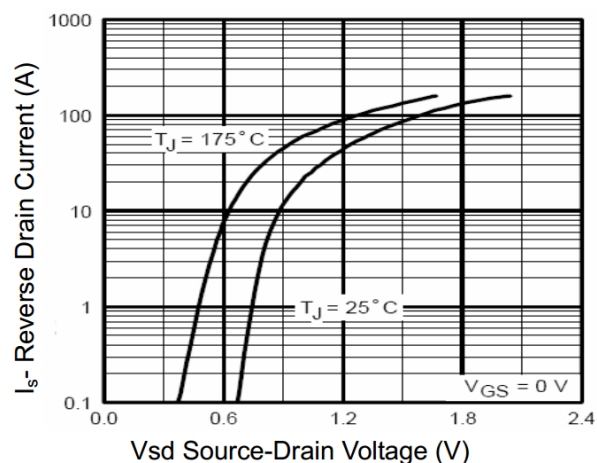


Figure 6 Source- Drain Diode Forward

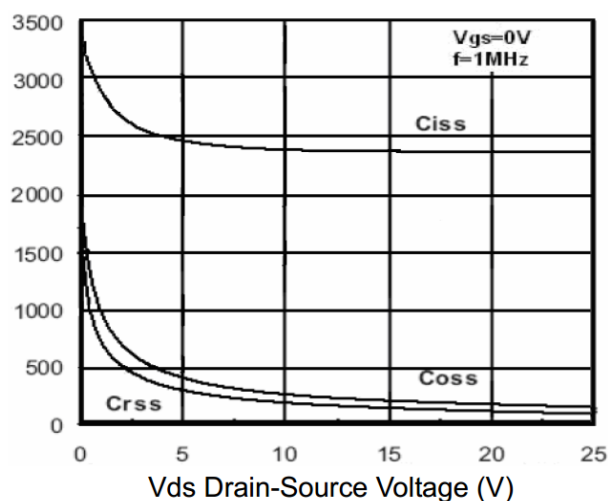


Figure 7 Capacitance vs Vds

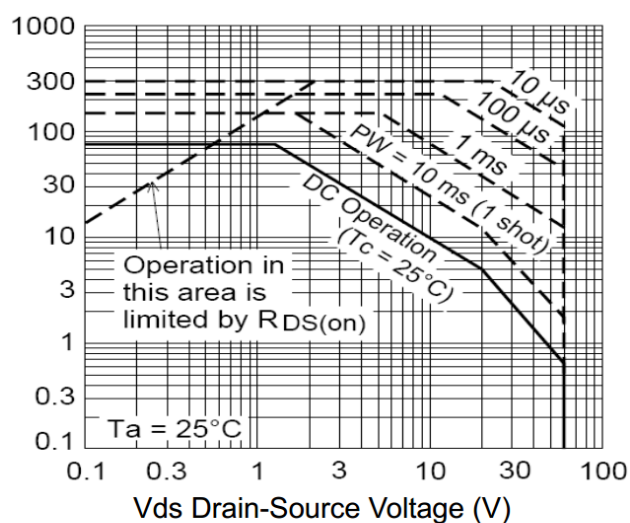


Figure 8 Safe Operation Area

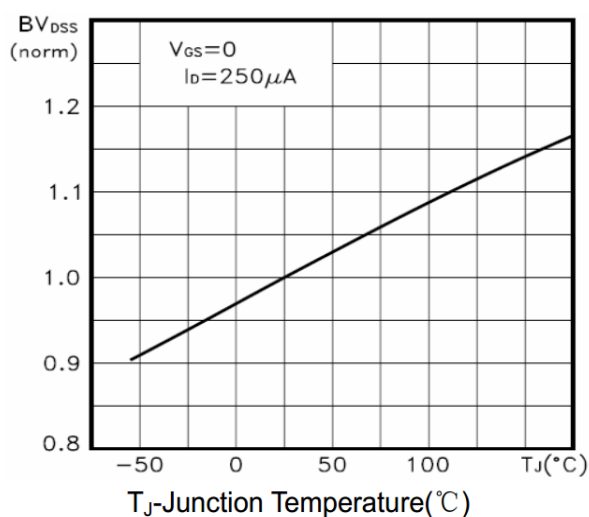


Figure 9 BV_{DS} vs Junction Temperature

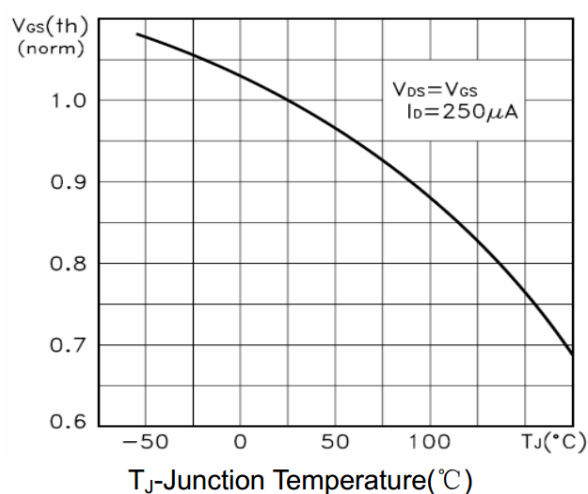


Figure 10 $V_{GS(th)}$ vs Junction Temperature