TIGER ELECTRONIC CO.,LTD

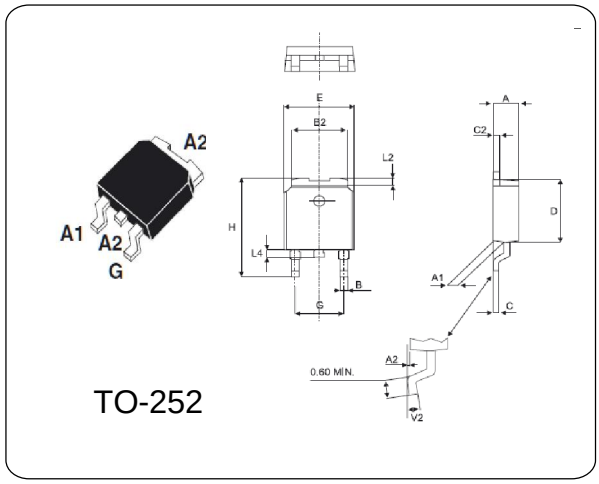
500V N-Channel MOSFET FQD5N50

DESCRIPTION

These N-Channel enhancement mode power field effect transistors are produced using Fairchild’ s proprietary, planar stripe, DMOS technology.
This advanced technology has been especially tailored to minimize on-state resistance, provide superior switching performance, and withstand high energy pulse in the avalanche and commutation mode. These devices are well suited for high efficiency switch mode power supply.

ABSOLUTE MAXIMUM RATINGS (Ta = 25 °C)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	500	V
Drain Current - Continuous	I_D	3.5	A
Drain Current - Pulsed	I_{DM}	14	A
Gate-Source Voltage	V_{GSS}	±30	V
Power Dissipation	P_D	50	W
Max. Operating Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	-55~150	°C



TO-252

ELECTRICAL CHARACTERISTICS (Ta = 25 °C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS} = 0V, I_D =250 μ A	500	—	—	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =500V, V_{GS} =0V	—	—	1.0	uA
Gate-Body Leakage Current, Forward	I_{GSSF}	V_{GS} =30V, V_{DS} =0V	—	—	100	nA
Gate-Body Leakage Current, Reverse	I_{GSSR}	V_{GS} = -30V, V_{DS} =0V	—	—	-100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS} , I_D =250 μ A	3.0	—	5.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 10 V, I_D = 1.75 A	—	—	1.8	**W**
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS} = 0 V, I_S = 3.5 A	—	—	1.4	V

Typical Characteristics

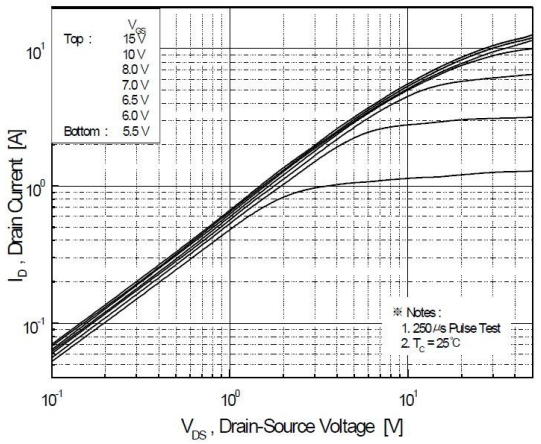


Figure 1. On-Region Characteristics

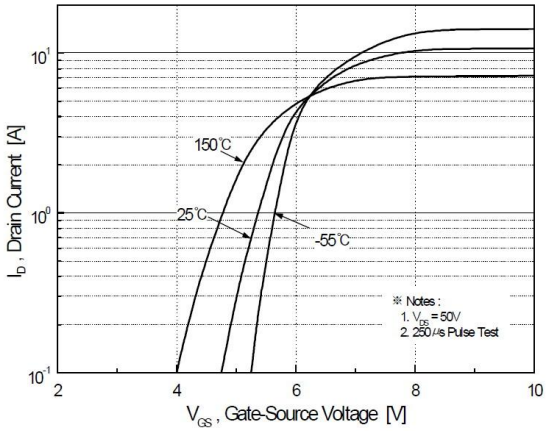


Figure 2. Transfer Characteristics

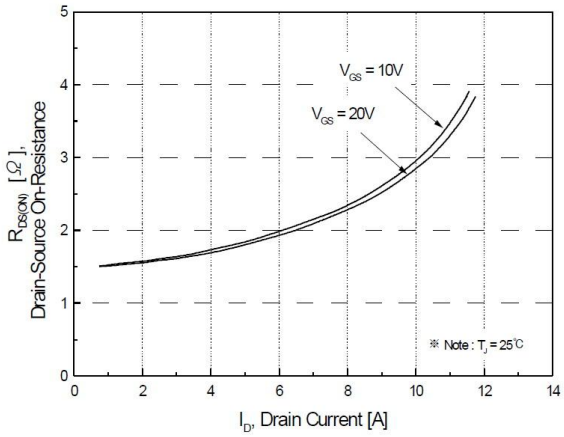


Figure 3. On-Resistance Variation vs. Drain Current and Gate Voltage

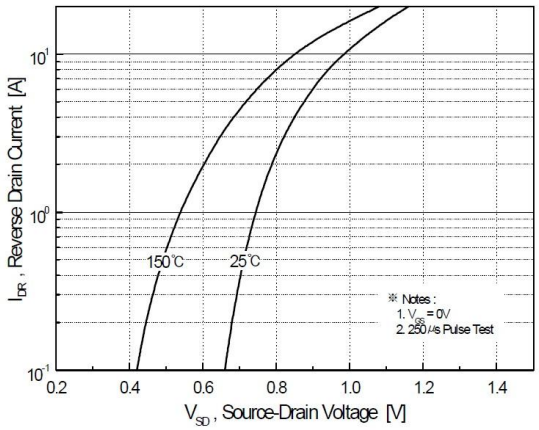


Figure 4. Body Diode Forward Voltage Variation vs. Source Current and Temperature

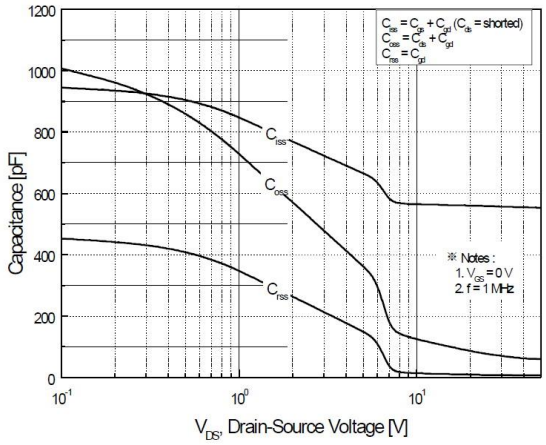


Figure 5. Capacitance Characteristics

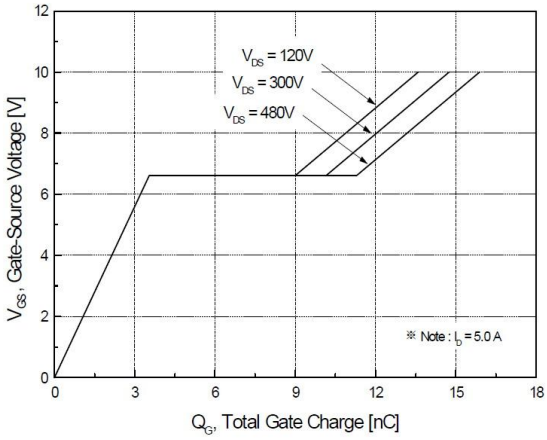


Figure 6. Gate Charge Characteristics