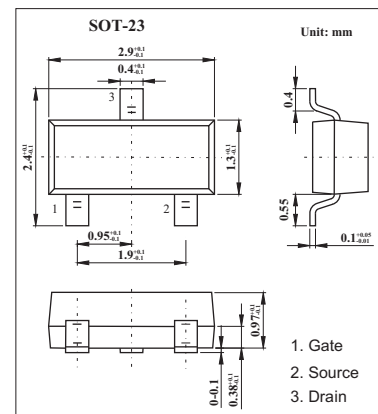
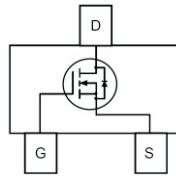


N-Channel PowerTrench MOSFET

FDN5630

■ Features

- V_{DS} (V) = 60V
- $R_{DS(ON)} < 100 \text{ m}\Omega$ ($V_{GS} = 10\text{V}$)
- $R_{DS(ON)} < 120 \text{ m}\Omega$ ($V_{GS} = 6\text{V}$)
- Optimized for use in high frequency DC/DC converters
- Low gate charge
- Very fast switching

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-to-source voltage	V_{GS}	± 20	V
Drain current -Continuous	I_D	1.7	A
-Pulsed		10	
Power dissipation	P_D	0.5	W
Maximum Junction-to-Ambient	$R_{\theta JA}$	250	$^\circ\text{C}/\text{W}$
Junction and storage temperature range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

N-Channel PowerTrench MOSFET

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■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-source Breakdown voltage	$V_{(BR)DSS}$	$I_D = 250 \mu A, V_{GS} = 0V$	60			V
Breakdown Voltage Temperature Coefficient	$\Delta V_{(BR)DSS}/\Delta T_J$	$I_D = 250 \mu A$, Referenced to 25°C		63		mV/°C
Static drain-source on- resistance	$R_{DS(on)}$	$I_D = 1.7A, V_{GS} = 10V$		73	100	mΩ
		$I_D = 1.7A, V_{GS} = 10V, T_a = 125^\circ C$		127	180	
		$I_D = 1.6A, V_{GS} = 6V$		83	120	
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250 \mu A$	1	2.4	3	V
Forward Transconductance	g_{fs}	$V_{DS} = 10 V, I_D = 1.7 A$		6		S
Gate-source leakage current	I_{DSS}	$V_{DS} = 48 V, V_{GS} = 0V$			1	μA
Gate-source forward leadage	I_{GSS}	$V_{GS} = -20V$			-100	nA
Gate-source reverse leadage		$V_{GS} = 20V$			100	
Total Gate Charge	Q_g	$V_{DS} = 20V, V_{GS} = 10 V, I_D = 1.7 A$		7	10	nC
Gate-Source Charge	Q_{gs}			1.6		
Gate-Drain Charge	Q_{gd}			1.2		
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 30 V, I_D = 1 A, V_{GS} = 10 V, R_{GEN} = 6 \Omega$		10	20	ns
Rise time	t_r			6	15	
Turn-off delay time	$t_{d(off)}$			15	28	
Fall time	t_f			5	15	
Input capacitance	C_{iss}	$V_{DS} = 15 V, V_{GS} = 0 V, f = 1MHz$		400		pF
Output capacitance	C_{oss}			102		
Reverse transfer capacitance	C_{rss}			21		
Maximum Continuous Drain-Source Diode Forward Current	I_S				0.42	A
Diode forward voltage	V_{SD}	$V_{GS} = 0 V, I_S = 0.42 A$		0.72	1.2	V