

General Description

It combines advanced trench MOSFET technology with a low resistance package to provide extremely low $R_{DS(ON)}$. This device is ideal for switch and battery protection applications.

Features

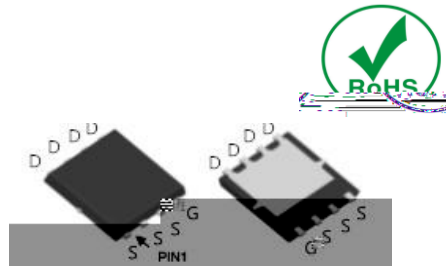
high cell density Trench technology
 $R_{DS(ON)}$ to minimize conductive loss

Wettable Flanks

Application

2nd Synchronous Rectifier
 BLDC Motor driver

Product Summary



Ordering Information:

	3000

Absolute Maximum Ratings $T_C = 25$

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	$I_{D@T_C=25}$	95	A
	$I_{D@T_C=75}$	72	A
	$I_{D@T_C=100}$	60	A
	$I_{D@T_A=25}$	32	A
	$I_{D@T_A=70}$	26	A
Pulsed Drain Current	I_{DM}	285	A
Total Power Dissipation	$P_D@T_C=25$	40	W
Total Power Dissipation	$P_D@T_A=25$	2.5	W
Operating Junction Temperature	T_J	-55 to 175	
Storage Temperature	T_{STG}	-55 to 175	

Single Pulse Avalanche Energy (L=0.5mH,VGS=10V,Rg=25)	E_{AS}	260	mJ
Single Pulse Avalanche Energy (L=0.1mH,VGS=10V,Rg=25)	E_{AS}	120	mJ

Thermal resistance

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal resistance, junction - case	R_{thJC}	-	-	3.1	° C/W
Thermal resistance, junction - ambient	R_{thJA}	-	-	50	° C/W
Soldering temperature, wave soldering for 10s	T_{sold}	-	-	260	° C

Electronic Characteristics

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{GS} = V_{DS}, I_D = 250\mu A$	1.5		2.5	V
Drain-Source Leakage Current	I_{DSS}	$V_{DS} = 30V, V_{GS} = 0V$			1.0	μA
Gate- Source Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			100	nA
Static Drain-source On Resistance		$V_{GS} = 10V, I_D = 24A$				
		$V_{GS} = 4.5V, I_D = 12A$				
Forward Transconductance	g_{FS}	$V_{DS} = 25V, I_D = 10A$				
Source-drain voltage	V_{SD}	$I_S = 24A$				

Dynamic Characteristics

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Input capacitance	C_{iss}	$f = 1MHz,$ $V_{DS} = 25V$	-	1970	-	pF
Output capacitance	C_{oss}		-	507	-	
Reverse transfer capacitance	C_{rss}		-	12	-	
Gate Resistance	R_g	$f = 1MHz$		1.5		
Total gate charge	Q_g	$V_{DD} = 15V$ $I_D = 5A$ $V_{GS} = 10V$	-	29	-	nC
Gate - Source charge	Q_{gs}		-	4.6	-	
Gate - Drain charge	Q_{gd}		-	4.9	-	
Turn-ON Delay time	$t_{D(on)}$			10		ns

Fig.12

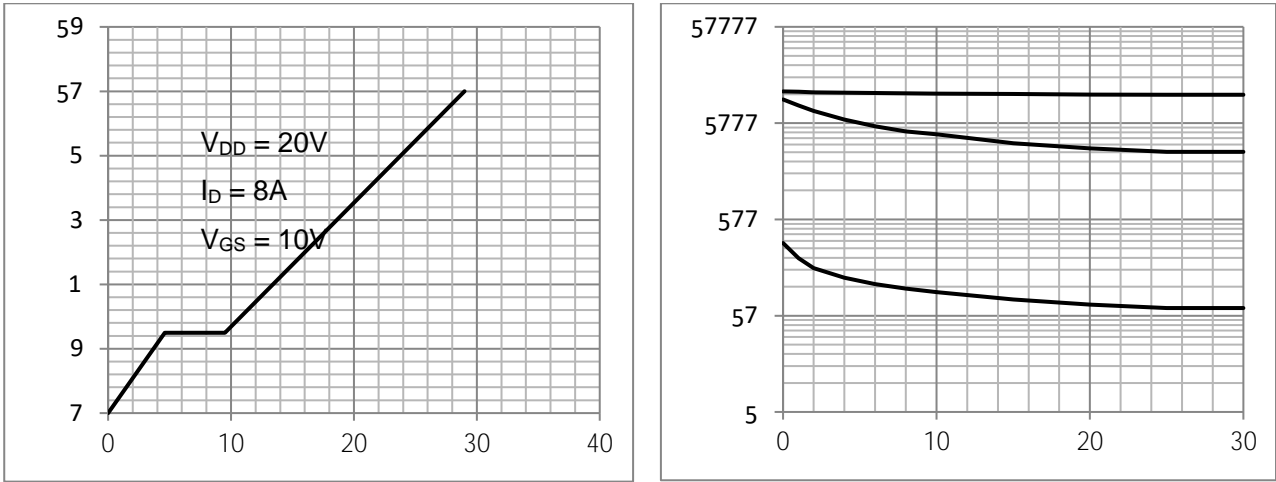


Fig.13

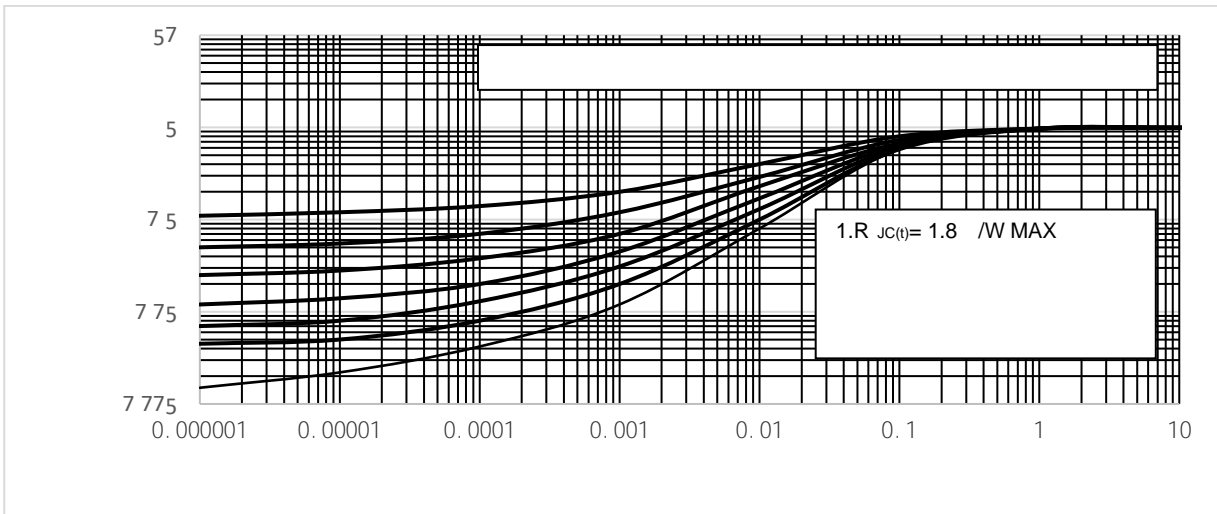


Fig.14 Switching Time Measurement Circuit

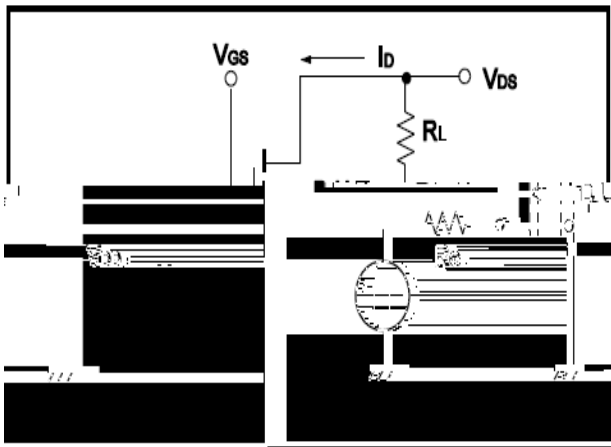


Fig.15 Gate Charge Waveform

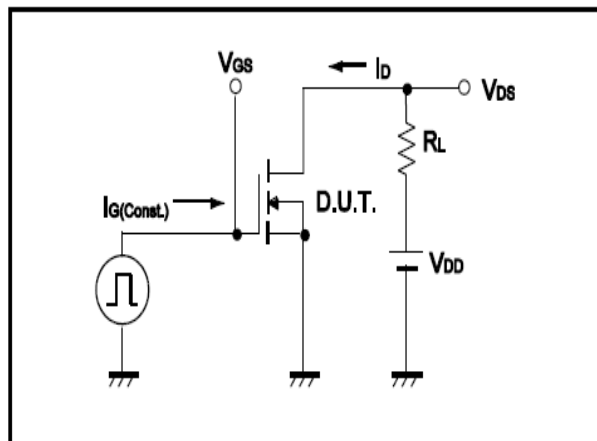


Fig.16 Avalanche Measurement Circuit

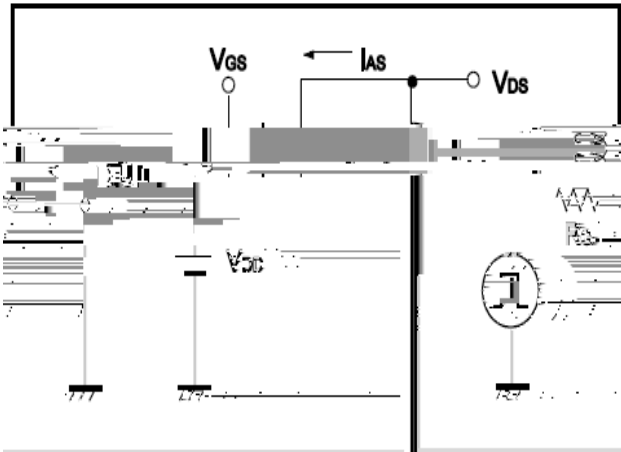


Fig.17 Avalanche Waveform

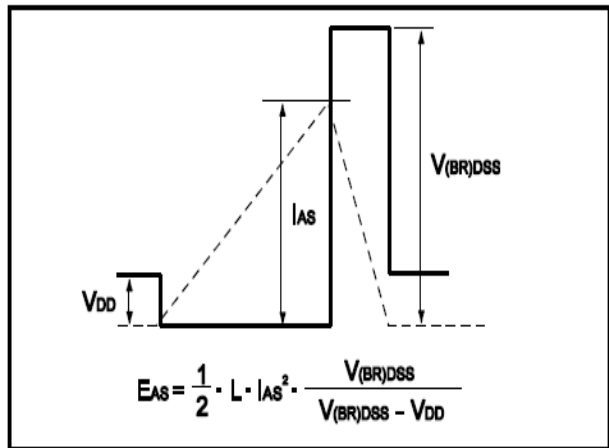
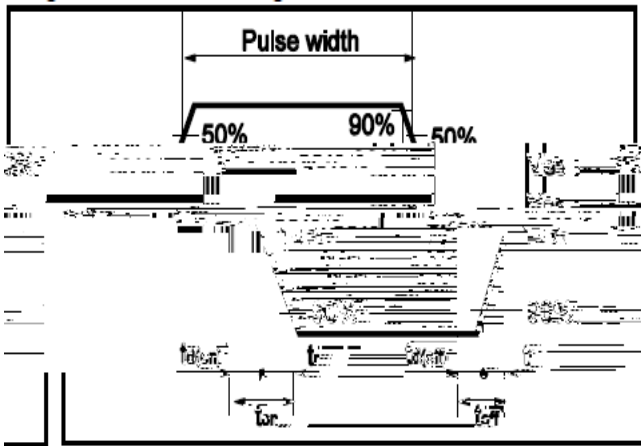


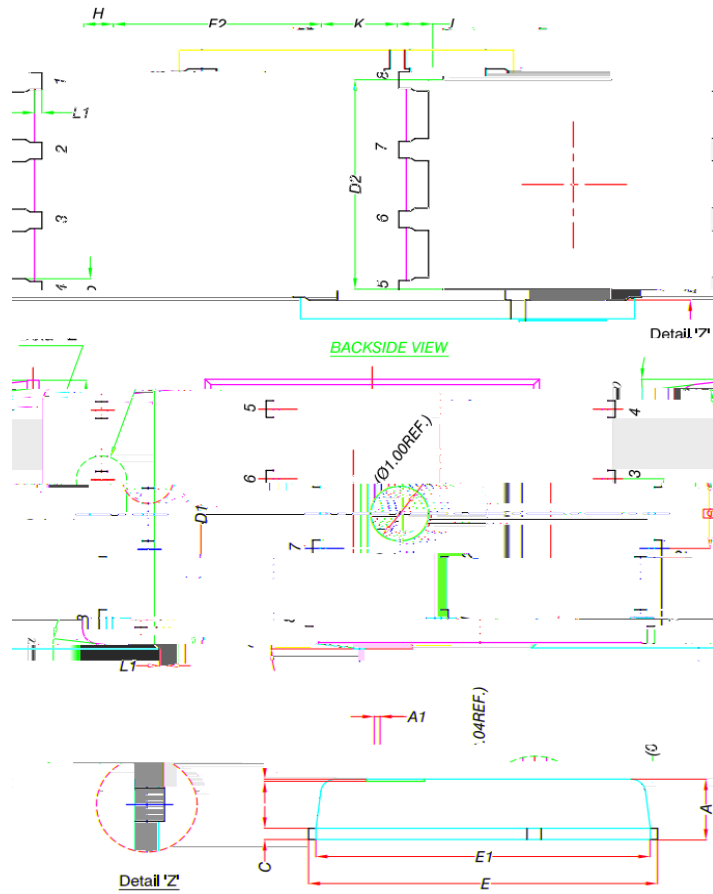
Fig.18 Gate Charge Waveform





Dimensions DFN5x6

Unit mm



DIM.	MILLIMETERS		
	MIN.	NOM.	MAX.
A	0.90	1.00	1.10
A1	0	-	0.05
b	0.33	0.41	0.51
C	0.20	0.25	0.30
D1	4.80	4.90	5.00
D2	3.61	3.81	3.96

