

H75N15FB

150V Single N-Channel MOSFET

VDSS	R _{DS(ON)} (Typ)	ID
150V	8mΩ	75A

Features:

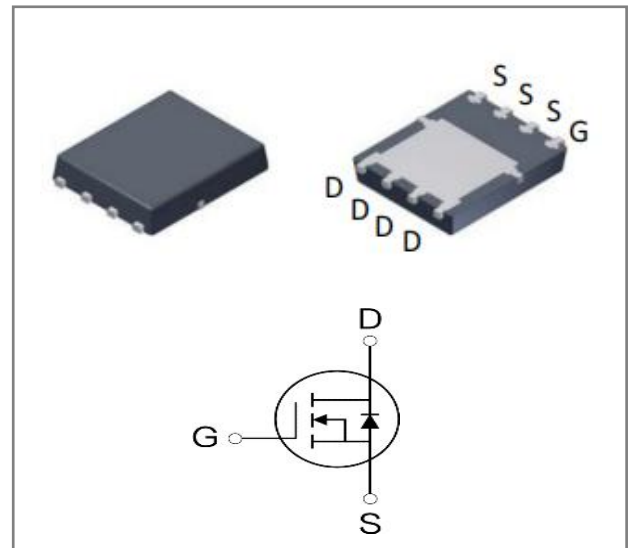
- Fast switching speed
- 100% avalanche tested
- Improved dv/dt capability
- Enhanced Avalanche Ruggedness
- Lead Free

Applications:

- Synchronous Rectification in SMPS
- Hard Switching and High Speed Circuit
- Power Tools
- UPS
- Motor Control

Ordering Information

Part Number	Package	Marking	Packing	Qty.
H75N15FB	DFN5*6	H75N15FB	Tape&reel	5000 PCS



Absolute Maximum Ratings (Tc= 25°C unless otherwise specified)

Symbol	Parameter	Rating	Units
VDS	Drain-to-Source Voltage	150	V
VGS	Gate- to- Source Voltage	±20	V
ID	Continuous Drain Current TC=25°C	75	A
	Continuous Drain Current TC=100°C	47	
IDM	Pulsed Drain Current	250	
PD	Power Dissipation	114	W
EAS	Single Pulse Avalanche Energy L = 0.4mH, RG = 25 Ω, TC=25°C	320	mJ
TJ, TSTG	Operating Junction and Storage Temperature Range	-55 to 150	°C

Thermal Characteristics

Symbol	Parameter	Typ	Max	Unit
RθJC	Thermal Resistance Junction-Case	--	1.1	°C/W
RθJA	Thermal Resistance Junction-Ambient	--	55	°C/W

Electrical Characteristics (TJ= 25℃ unless otherwise specified)

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
V(BR)DSS	Drain- Source Breakdown Voltage	150	--	--	V	VGS=0V,ID=250μA
IDSS	Zero Gate Voltage Drain Current (25℃)	--	--	1	μA	VDS=150V,VGS=0V
	Zero Gate Voltage Drain Current (100℃)	--	--	100	μA	VDS=150V,VGS=0V
IGSS	Gate to Source Forward Leakage	--	--	100	nA	VGS=20V ,VDS=0V
	Gate to Source Reverse Leakage	--	--	-100		VGS=-20V ,VDS=0V
VGS(TH)	Gate Threshold Voltage	1	2	3	V	VGS=VDS,ID=250μA
RDS(on)	Static Drain- to- Source On-Resistance	--	8	11.5	mΩ	VGS=10V,ID=20A
		--	9.4	15	mΩ	VGS=4.5V,ID=20A

Dynamic Electrical Characteristics

Ciss	Input Capacitance	--	3784	--	pF	VGS=0V VDS=75V f=1MHz
Coss	Output Capacitance	--	257	--		
Crss	Reverse Transfer Capacitance	--	7.3	--		
Rg	Gate Resistance	--	2.6	--	Ω	f=1MHz
Qg	Total Gate Charge	--	48	--	nC	VDS=75V ID=20A VGS=10V
Qgs	Gate- to- Source Charge	--	11	--		
Qgd	Gate-to-Drain(" Miller") Charge	--	5	--		

Switching Characteristics

td(ON)	Turn- on Delay Time	--	18	--	nS	VDS=75V ID=20A RG=10Ω VGS=10V
trise	Rise Time	--	8	--		
td(OFF)	Turn- OFF Delay Time	--	29	--		
tfall	Fall Time	--	10	--		

Source- Drain Diode Characteristics

VSD	Diode Forward Voltage	--	0.9	1.2	V	IF=20A,VGS=0V
trr	Reverse Recovery Time	--	52	--	nS	VR=75V,IF=20A di/dt=100A/μs
Qrr	Reverse Recovery Charge	--	442	--	nC	

Typical Characteristics

Fig 1. Typical Output Characteristics

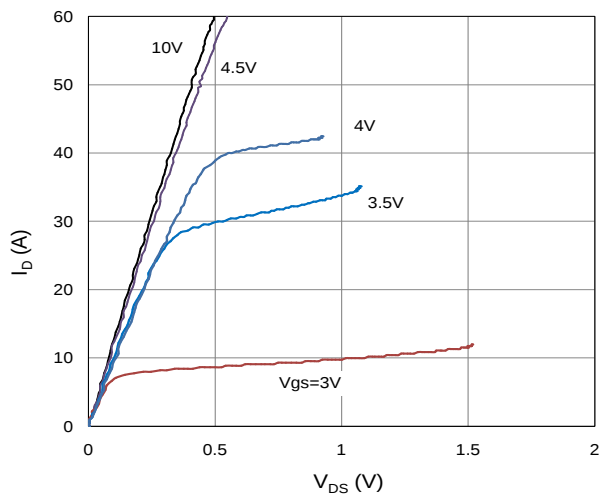


Figure 2. On-Resistance vs. Gate-Source Voltage

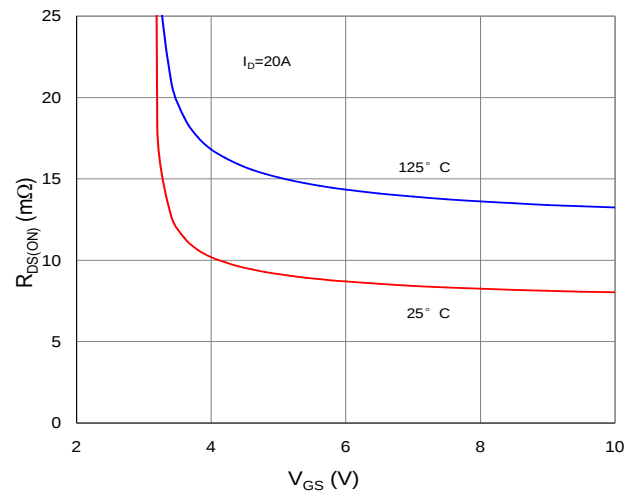


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

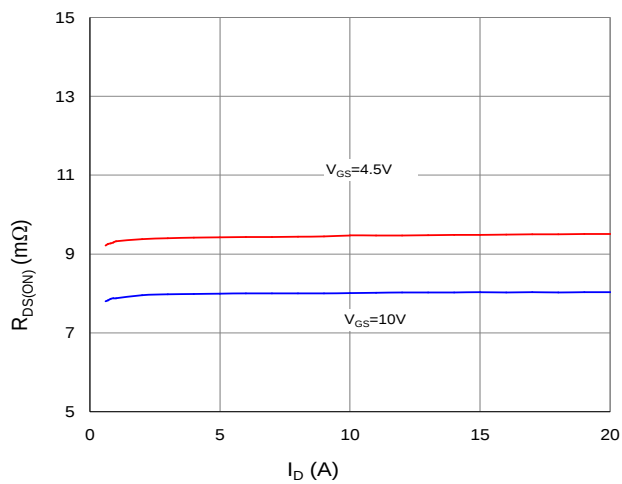


Figure 4. Normalized On-Resistance vs. Junction Temperature

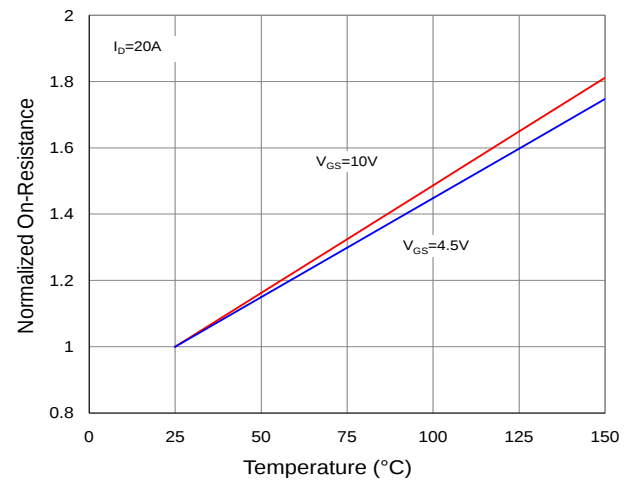


Figure 5. Typical Transfer Characteristics

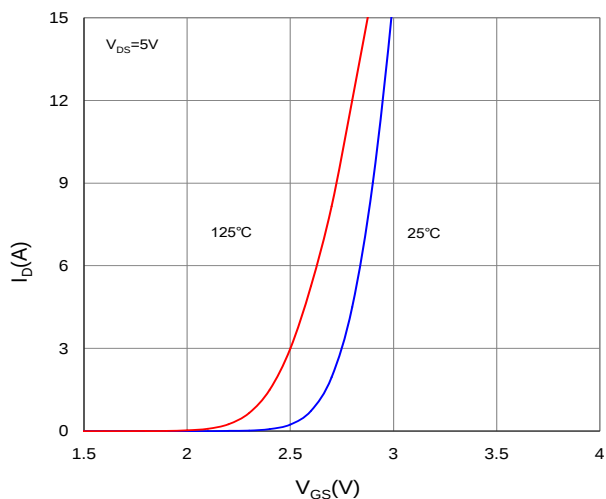


Figure 6. Typical Source-Drain Diode Forward Voltage

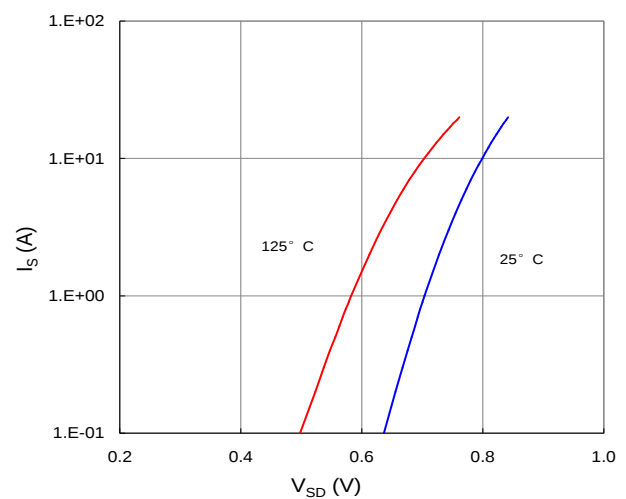


Figure 7. Typical Gate-Charge vs. Gate-to-Source Voltage

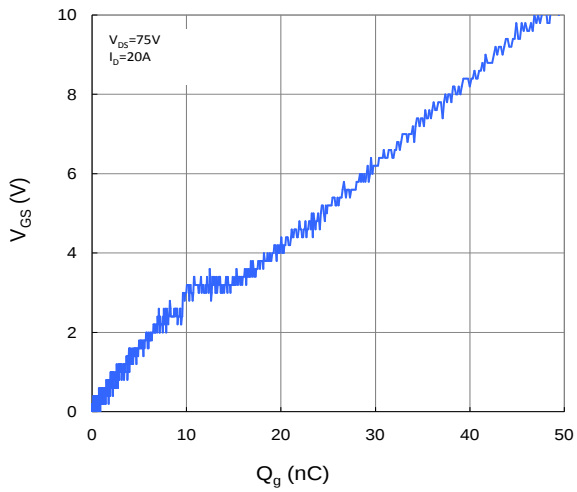


Figure 8. Typical Capacitance vs. Drain-to-Source Voltage

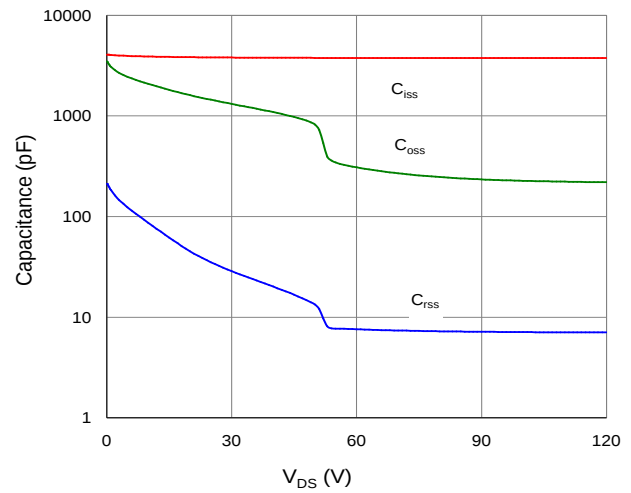


Figure 9. Maximum Safe Operating Area

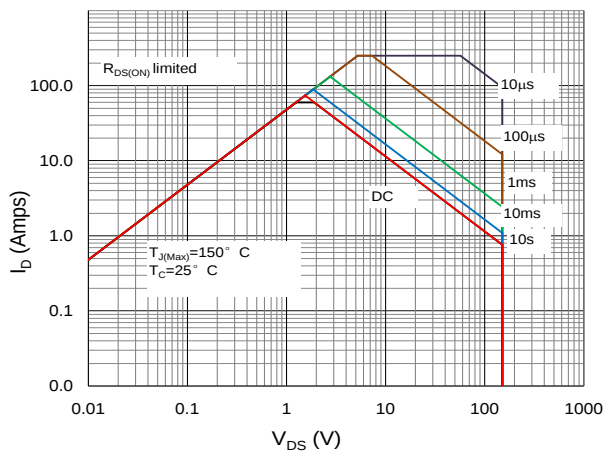


Figure 10. Maximum Drain Current vs. Case Temperature

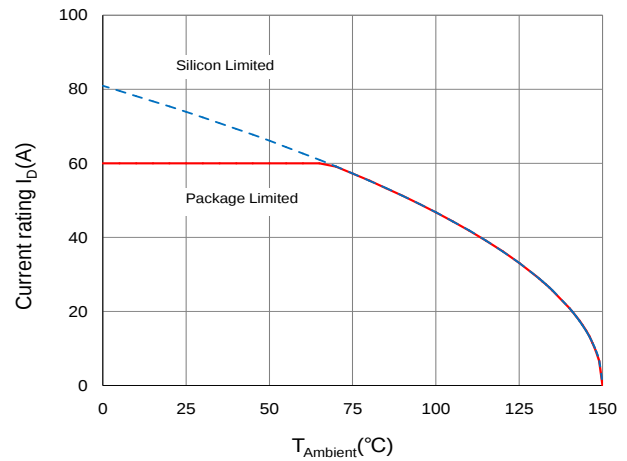
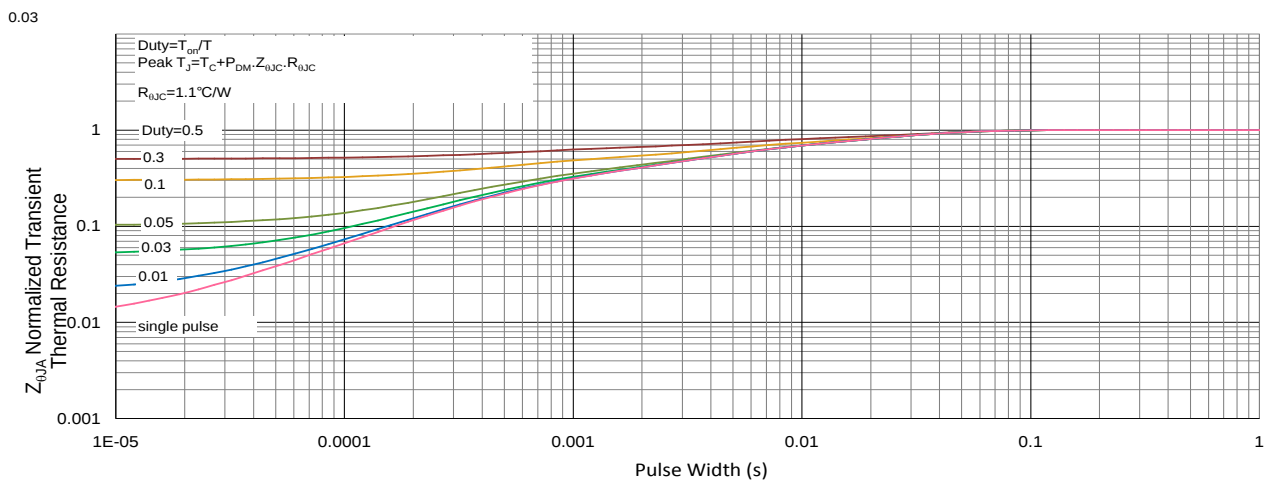


Figure 11. Normalized Maximum Transient Thermal Impedance, Junction-to-Ambient



Test ircuits and Waveforms

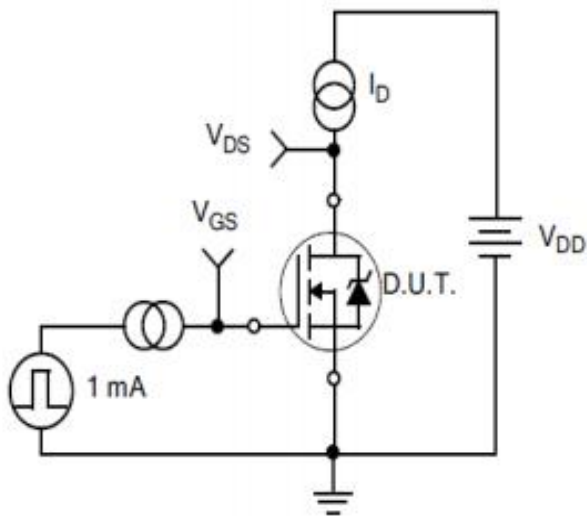


Figure A.
Gate Charge Test Circuit

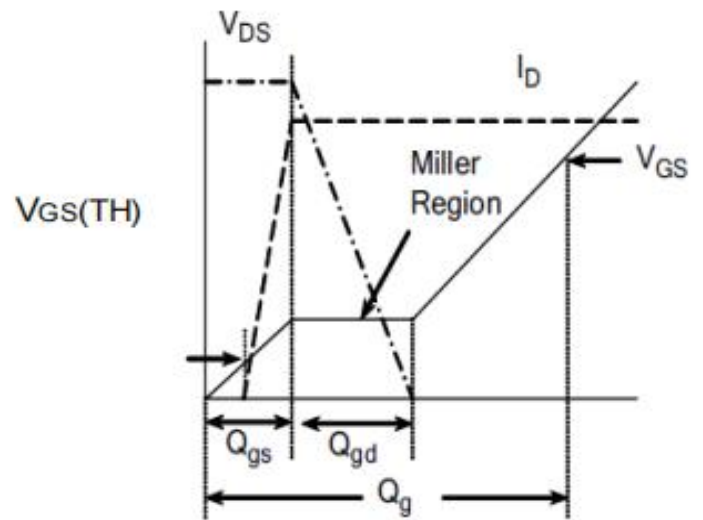


Figure B.
Gate Charge Waveform

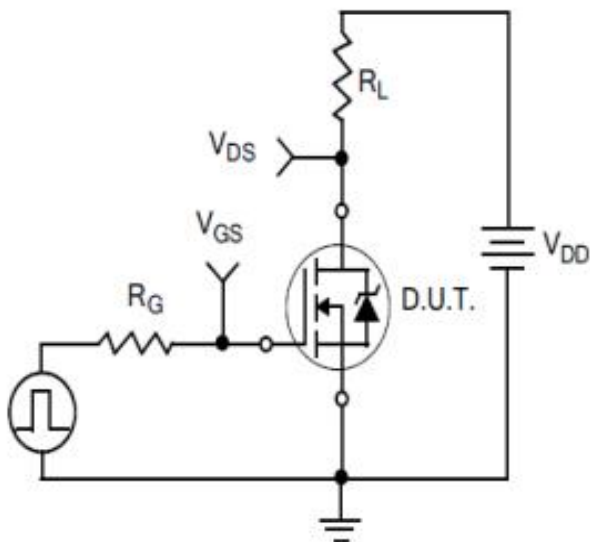


Figure C.
Resistive Switching Test Circuit

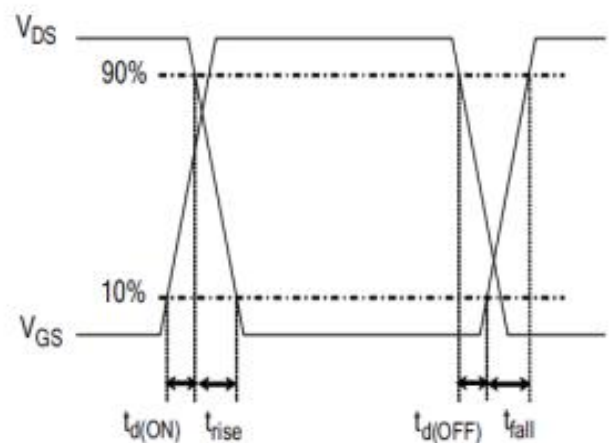
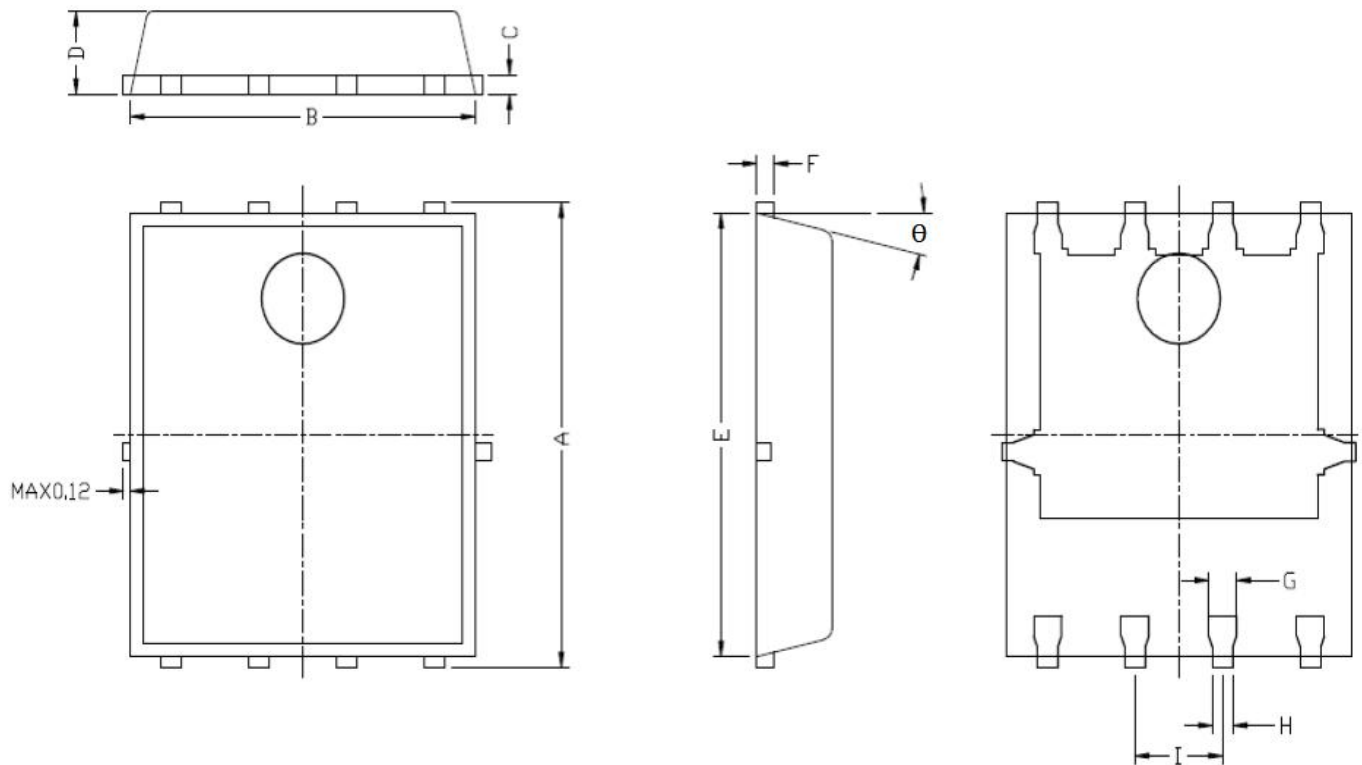


Figure D.
Resistive Switching Waveforms

Package outline drawing (DFN5*6 Unit: mm)



Symbol	Unit: mm	
	Min	Max
A	5.9	6.25
B	4.8	5.025
C	0.2	0.3
D	0.9	1.125
E	5.674	5.885
F	0.2	0.3
G	0.3	0.51
H	0.2	0.4
I	1.26	1.28