GOSTONE

RoHS COMPLIANT

GN326A

N-channel Power MOSFET:
30V, 3.8mohm, 50A

Product Summary			
VDSS	VGSS	RDS(ON) TYP/MAX	ID MAX
30V	± 20V	3.8/5.2 mΩ@VGS=10V 6.1/9.5 mΩ@VGS=4.5V	**50A**

Features

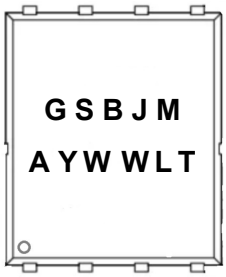
- ❖ Low RDSon
- ❖ Low Gate Charge
- ❖ High Current Capacity
- ❖ Halogen-Free / RoHS Compliant

Application

- ❖ Battery Charging & Discharging for NB Battery Pack
- ❖ DC/DC Converters in Computing.

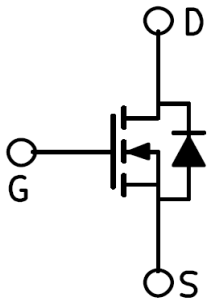
Marking Symbol Code

- ❖ Laser Marking Device Code: BJM



GS : Gostone (fixed)
BJM: Marking Device Code (fixed)
A: Factory Code
Y: Year Code
WW: Week Code
LT: LOT Code
○ : Pin#1 Identifier

Equivalent circuit



Form

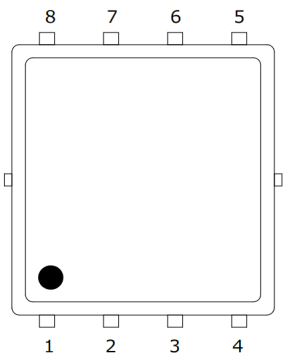
- ❖ Tape & Reel Embossed Type: 5,000pcs / reel

Absolute Maximum Rating Ta=25℃				
Parameter		Symbol	Rating	Unit
Drain to Source Voltage		VDS	30	V
Gate to Source Voltage		VGS	±20	V
Continuous Drain Current	Tc=25℃	ID	50	A
	Tc=100℃		32	A
Pulsed Drain Current[*1]		IDM	100	A
Continuous Drain Current	T_A=25℃	ID	15	A
	T_A=70℃		12	A
Avalanche Current		IAS	18	A
Avalanche Energy	L=0.1mH	EAS	16.2	mJ
Power Dissipation	Tc=25℃	PD	25	W
	Tc=100℃		10	W
Power Dissipation[*3]	T_A=25℃	PDSM	5	W
	T_A=70℃		3	W
Junction Temperature		Tj	150	℃
Storage Temperature		Tstg	-55 to +150	℃

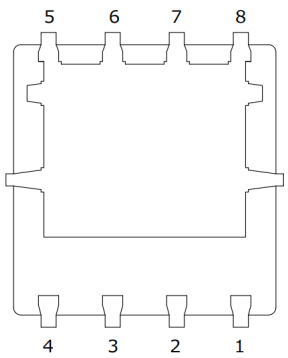
Thermal Characteristics (Typical)				
Parameter		Symbol	Rating	Unit
Junction-to Ambient (T_A=25℃)				
	t ≤ 10s	R_{thJA}[*2]	19.5	℃/W
	Steady-State		51.0	℃/W
Junction-to Case (Tc=25℃)				
	Steady-State	R_{thJC}	3.9	℃/W

[*1]Pulse width limited by maximum junction temperature.
[*2]The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with T_A=25℃.
[*3]The Power dissipation is based on $R_{\theta JA}$ t ≤ 10s value.

Top View



Bottom View



1,2,3: Source
4: Gate
5,6,7,8: Drain

Electrical Characteristics (Tj=25degC)

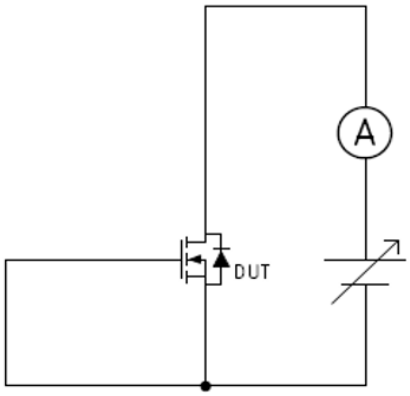
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	VDSS	ID=250μA, VGS=0V	30			V
Zero Gate Voltage Drain Current	IDSS	VDS=24V, VGS=0V			1	μA
Gate-Source Leakage Current	IGSS	VGS=±20V, VDS=0V			±100	nA
Gate-Source Threshold Voltage	Vth	VDS=VGS, ID=250μA	1.10	1.45	2.40	V
Drain-Source On-State Resistance	RDS(on)1	ID=13A, VGS=10V		3.8	5.2	mΩ
	RDS(on)2	ID=13A, VGS=4.5V		6.1	9.5	
Forward Transconductance	gFS	VGS=5V, ID=13A		14		S
Input Capacitance *1	Ciss	VDS=15V, VGS=0V, f=1MHz		768		pF
Output Capacitance *1	Coss			553		
Reverse Transfer Capacitance *1	Crss			31		
Gate Resistance *1	Rg	f=1MHz		0.8		Ω
Turn-On Delay Time *1 *2	td(on)	VDD=15V, VGS=10V, ID=13A		3		ns
Rise Time *1 *2	tr			2.5		
Turn-Off Delay Time *1 *2	td(off)	VDD=15V, VGS=10V, ID=13A		12		ns
Fall Time *1 *2	tf			5		
Total Gate Charge *1	Qg	VDD=15V, VGS=10V, ID=13A		15.2		nC
Gate-Source Charge *1	Qgs			2.3		
Gate-Drain Charge *1	Qgd			3.5		
Diode Forward Voltage	VSD	IS=13A, VGS=0V			1.2	V
Maximum Body Diode Continuous Current	IS				26	A
Body Diode Reverse Recovery Time *1	trr	IF=13A, di/dt=100A/μs		23.0		ns
Body Diode Reverse Recovery Charge *1	Qrr			10.0		nC

Note *1 Guaranteed by Design

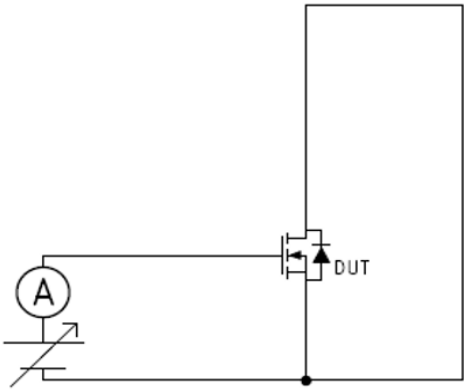
Note *2 Measurement Circuit for Switching Characteristics

Test circuits

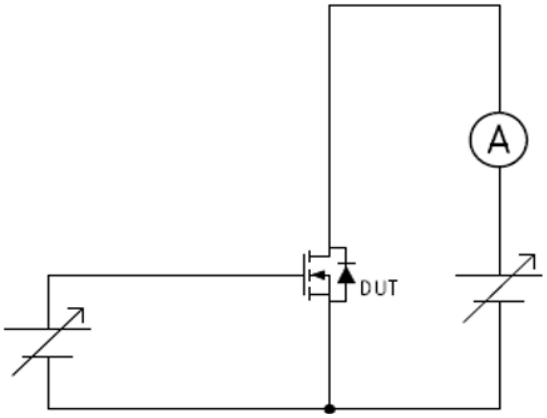
Test Circuit 1
VDSS/IDSS



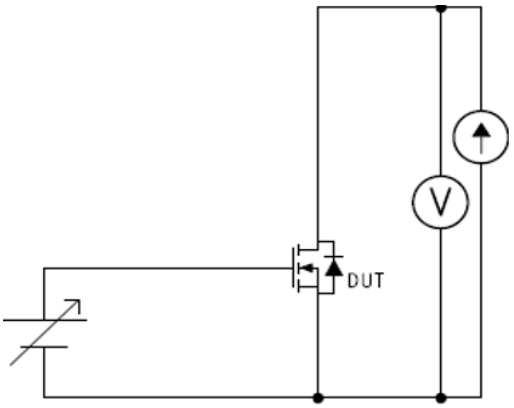
Test Circuit 2
IGSS



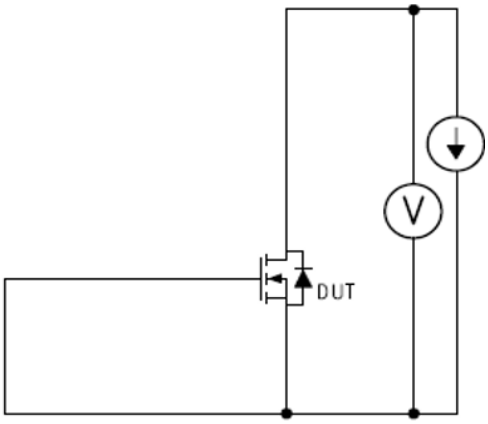
Test Circuit 3
Vth



Test Circuit 4
RDS(on)

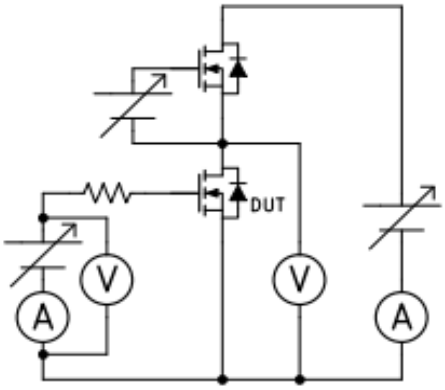


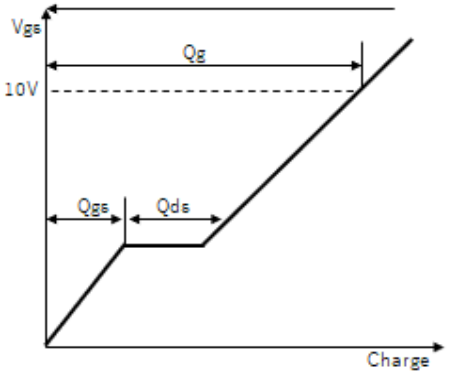
Test Circuit 5
VF



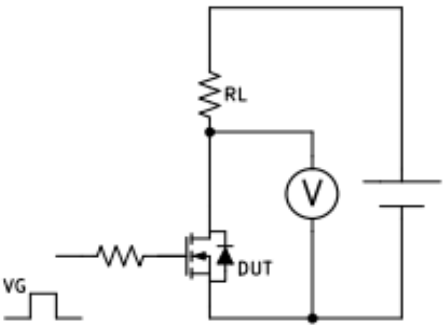
Test circuits

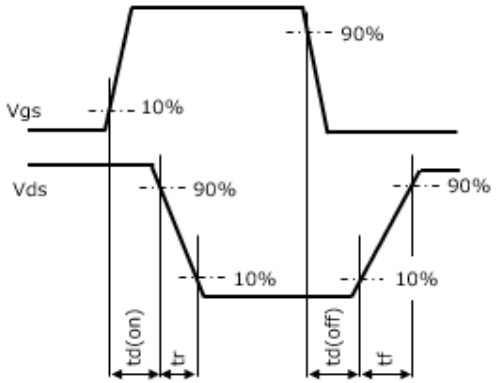
Test Circuit 6
Qg



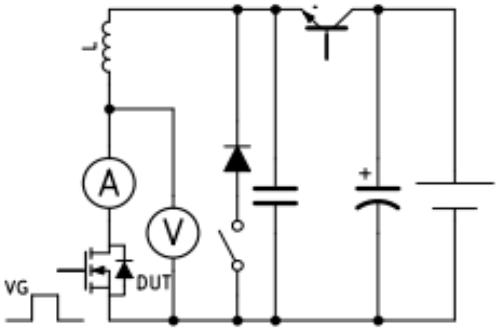


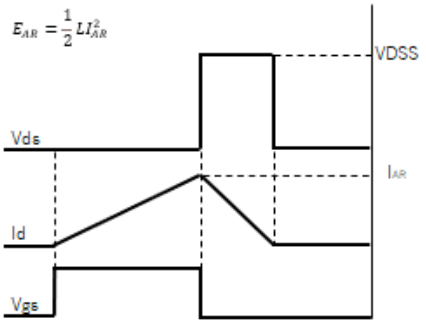
Test Circuit 7
Swiching Time



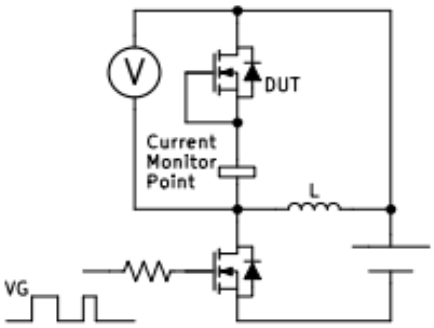


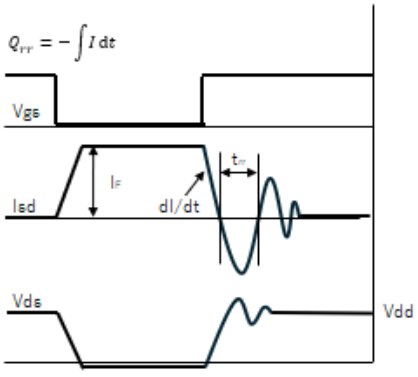
Test Circuit 8
IAS





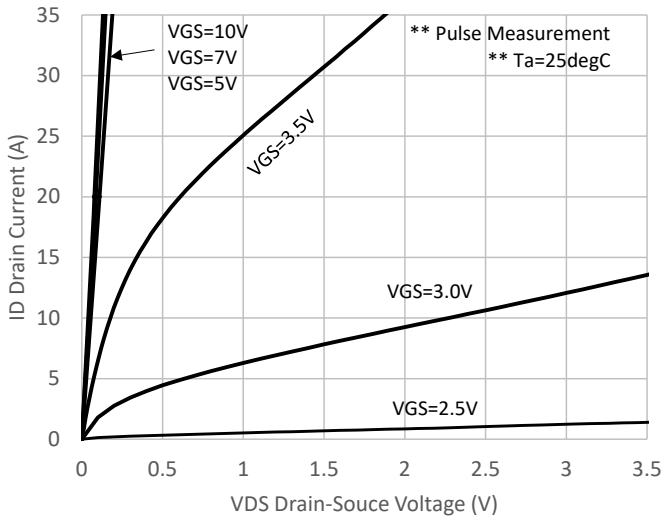
Test Circuit 9
trr/Qrr



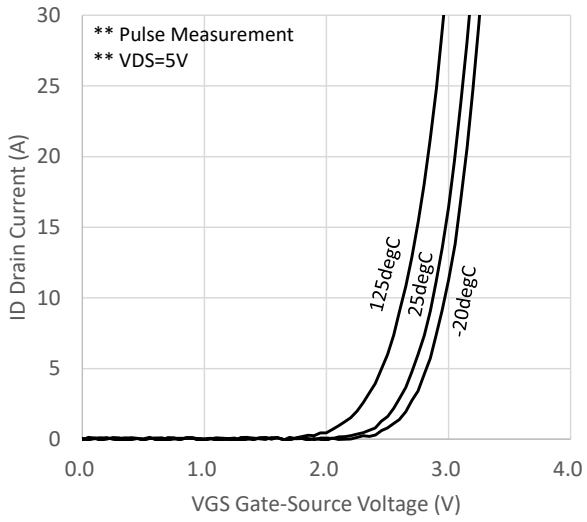


Technical data

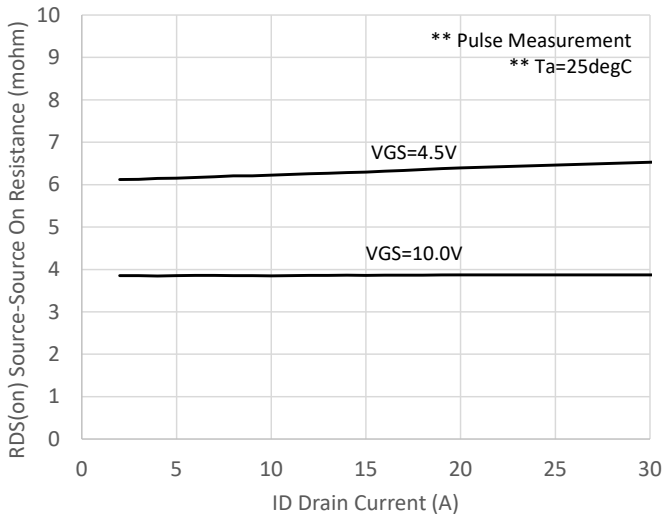
ID to VDS



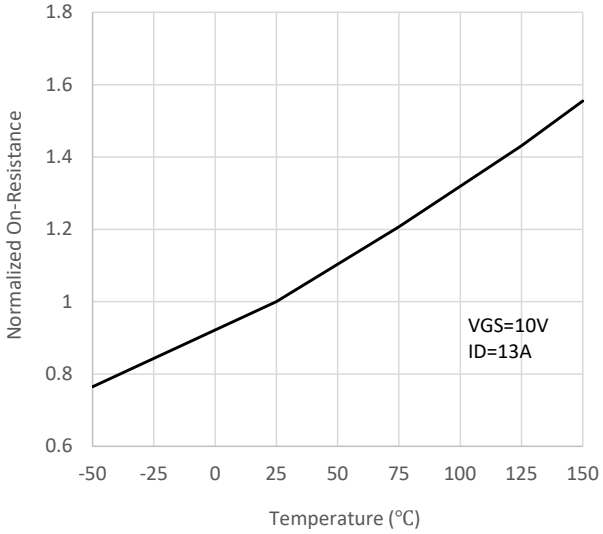
ID to VGS



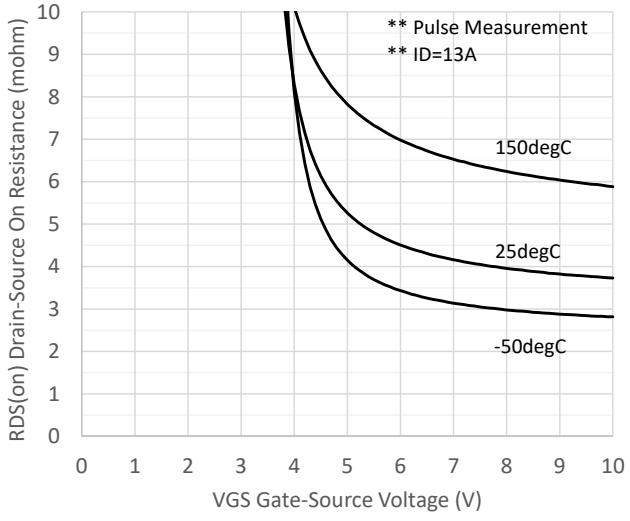
RDS(on) to ID



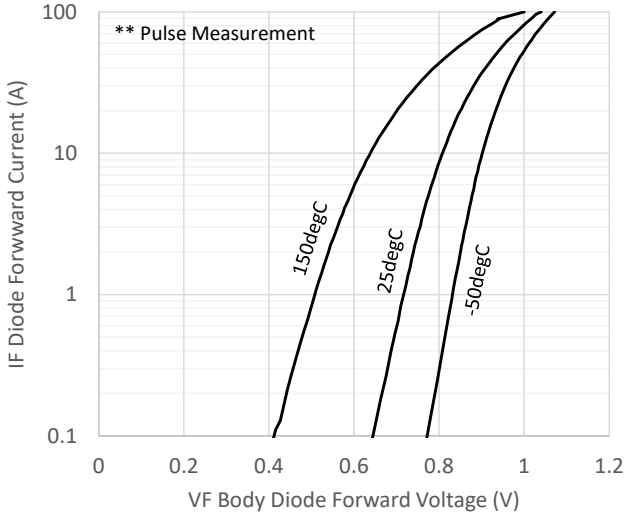
On-Resistance vs Junction Temperature



RDS(on) to VGS

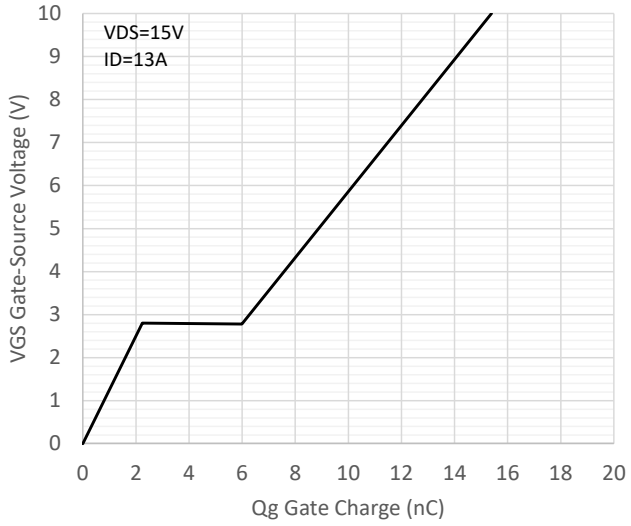


IF to VF

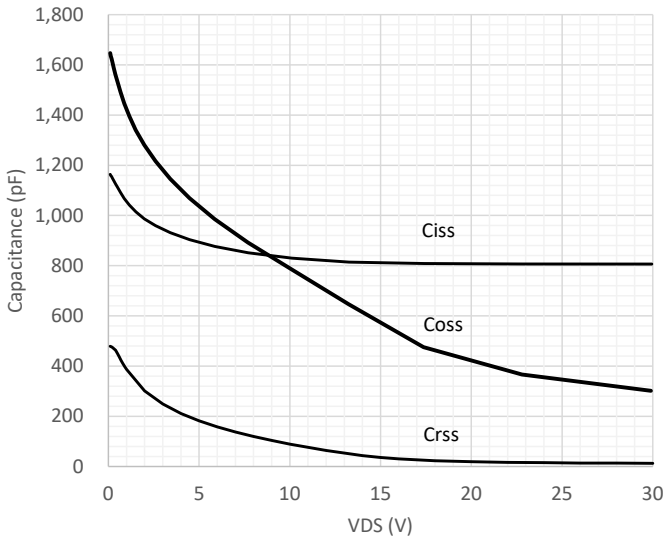


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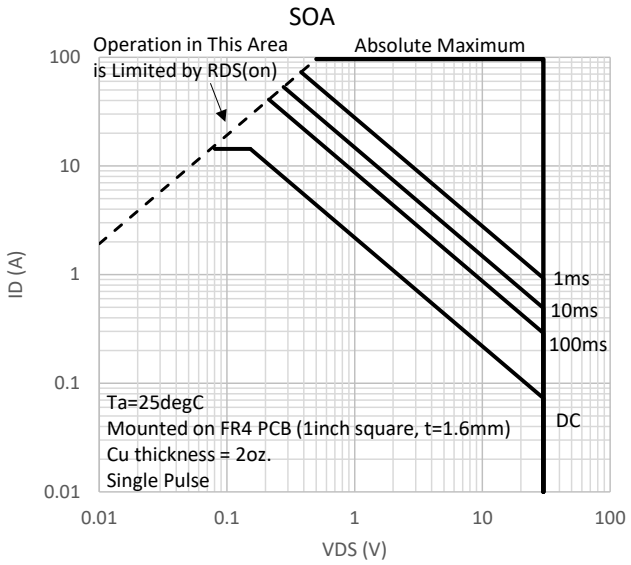
Gate-Charge Characteristics



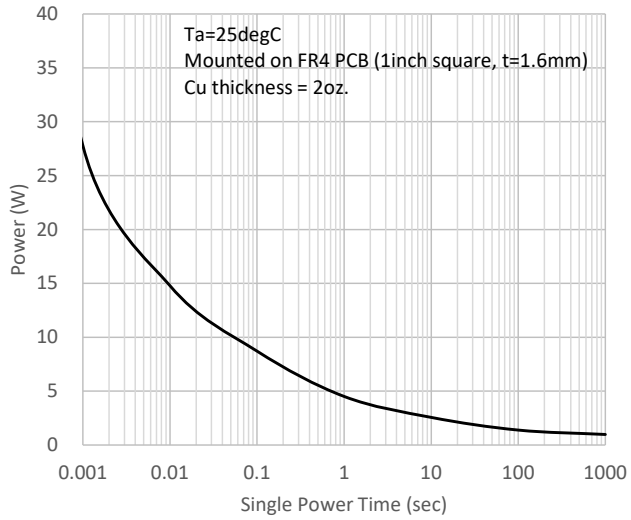
Capacitance Characteristic



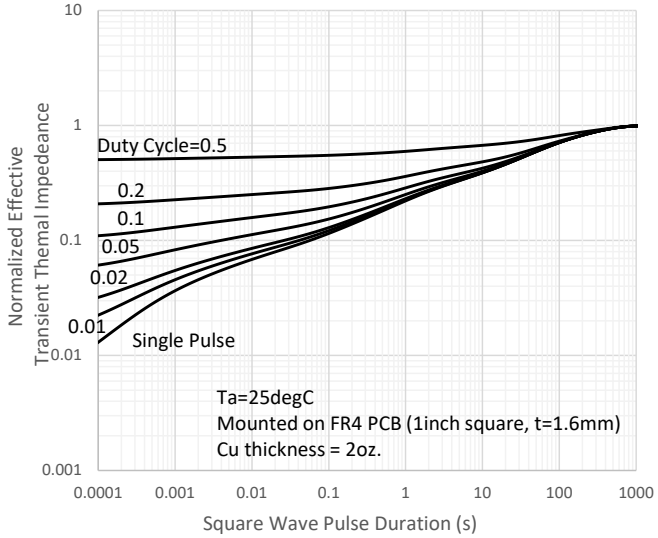
SOA



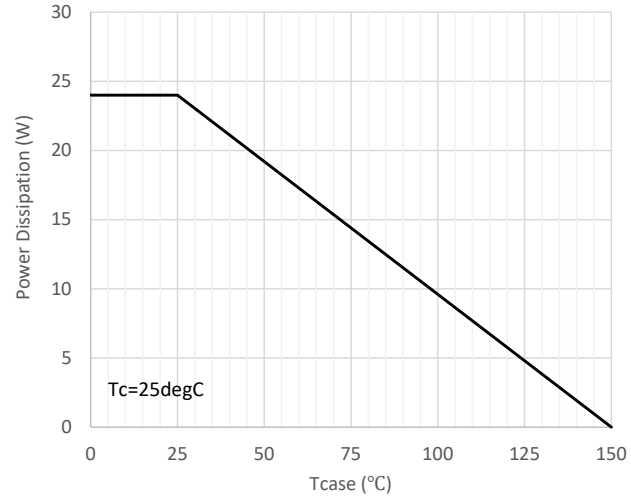
Single Pulse Maximum Power Dissipation



Thermal Response

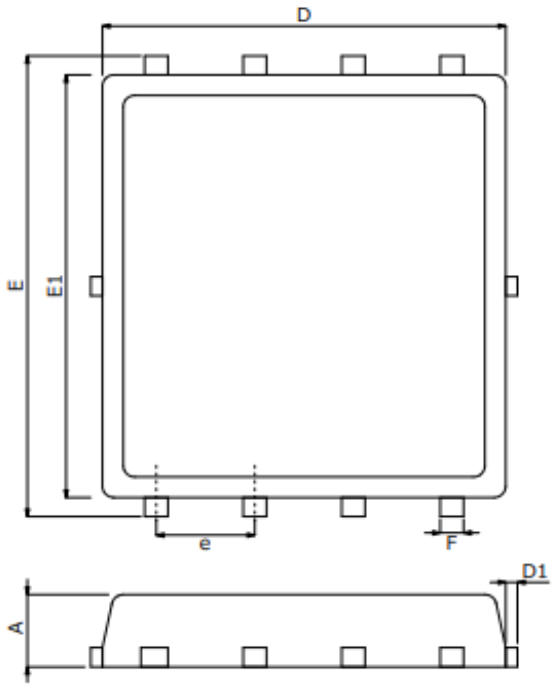


Power Derating



Package Outline Dimensions

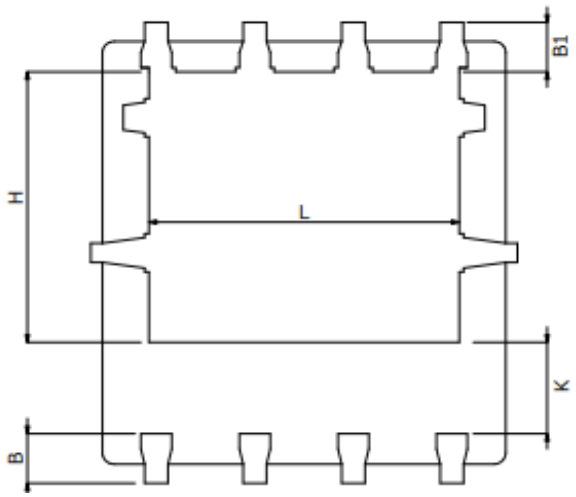
Top View



Side View



Bottom View

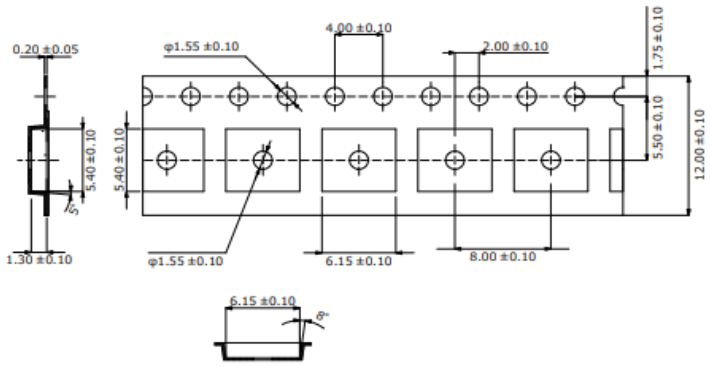


Symbol	Dimensions In Millimeters		
	MIN	NOM	MAX
A	0.900	0.950	1.000
B	0.480	0.580	0.680
B1	0.550	0.650	0.750
C	0.200	0.254	0.300
D	5.100	5.200	5.300
D1	-	-	0.150
E	5.900	6.050	6.200
E1	5.400	5.550	5.700
e	1.220	1.270	1.320
F	0.250	0.300	0.350
H	3.270	3.470	3.670
L	3.800	4.000	4.200
K	1.200	-	-

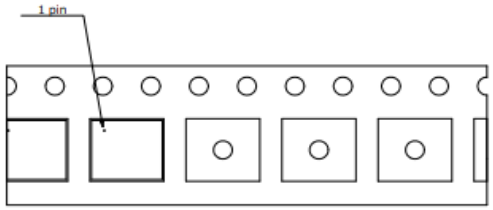
Form

- Tape & Reel Embossed Type: 5,000pcs / reel
- Factory PKG Code: PDFN
- Tape Width: 12mm, Pitch: 8mm, Reel Size: 12inch

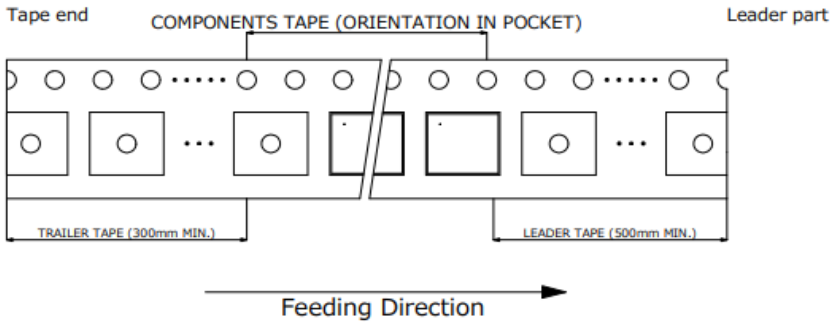
Tape size (mm)



Pin1 Direction



Tape end ~ Leader part (mm)



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