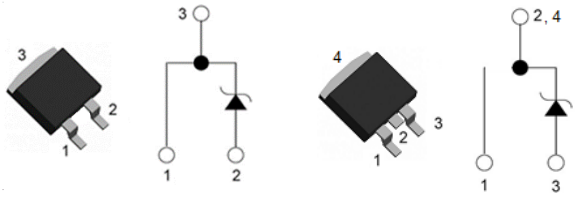
Product Summary

V_R = 650 V
I_F = 6A (T_C=150°C)
Qc = 15nC (V_R=400V)



DPAK
NF3D06065

DPAK
NF3D06065F

Features

- Zero Forward/Reverse Recovery
- High Blocking Voltage
- High Frequency Operation
- Positive Temperature Coefficient on V_F
- Temperature Independent Switching Behavior

Benefits

- High System Efficiency
- Parallel Device Convenience
- High Temperature Application
- High Frequency Operation
- Hard Switching & High Reliability
- Environmental Protection

Applications

- Switch Mode Power Supplies
- Server Power Supplies
- Solar Inverters
- AC/DC converters
- DC/DC converters
- Uninterruptable power supplies

Maximum Ratings (T_C=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}		650	V
Peak Reverse Surge Voltage	V_{RSM}		650	V
DC Blocking Voltage	V_R		650	V
Continuous Forward Current	I_F	T_C=25°C T_C=135°C T_C=150°C	19 8 6	A
Non repetitive Forward Surge Current	I_{FSM}	T_C = 25°C, t_p=10 ms, Half Sine Pulse T_C = 110°C, t_p=10 ms, Half Sine Pulse T_C = 25°C, t_p=10 µs, Square	40 35 250	A
Repetitive peak Forward Surge Current	I_{FRM}	T_C = 25°C, t_p=10 ms, Freq = 0.1Hz, 100 cycles, Half Sine Pulse T_C = 110°C, t_p=10 ms, Freq = 0.1Hz, 100 cycles, Half Sine Pulse	35 30	A
Total power dissipation	P_D	T_C=25°C	68	W
Operating Junction Temperature	T_J		-55 to 175	°C
Storage Temperature	T_{STG}		-55 to 175	°C

Electrical Characteristics

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
DC Blocking Voltage	V_{DC}	I_R = 250μA,T_J = 25°C	650			V
Forward Voltage	V_F	I_F = 6A, T_J = 25°C		1.43	1.75	V
		I_F = 6A, T_J = 125°C		1.58		
		I_F = 6A, T_J = 175°C		1.72		V
Reverse Current	I_R	V_R = 650V, T_J = 25°C		5	50	uA
		V_R = 650V, T_J = 125°C		38		uA
		V_R = 650V, T_J = 175°C		110		uA
Total Capacitive Charge	Q_C	V_R = 400V		15		nC
Total Capacitance	C	V_R = 1V, T_J = 25°C, Freq = 1MHz		235		pF
		V_R = 200V, T_J = 25°C, Freq = 1MHz		28		
		V_R = 400V, T_J = 25°C, Freq = 1MHz		22		

Thermal Characteristics

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Thermal Resistance	$R_{th(j-c)}$	junction-case		2.2		^{0}C/W

Typical Electrical Curves

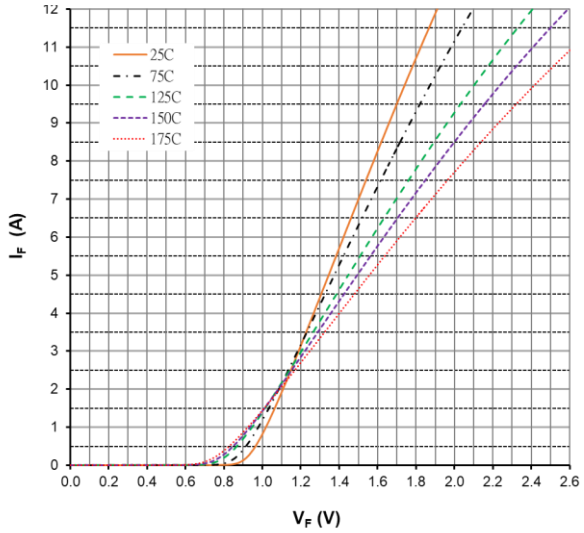


Figure 1. Forward Characteristics

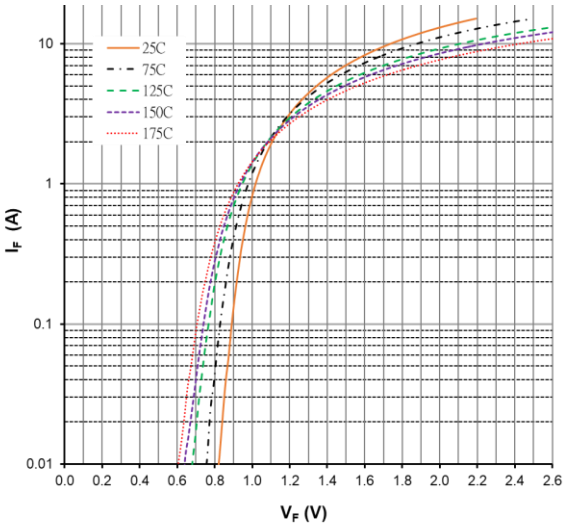


Figure 2. Forward Characteristics

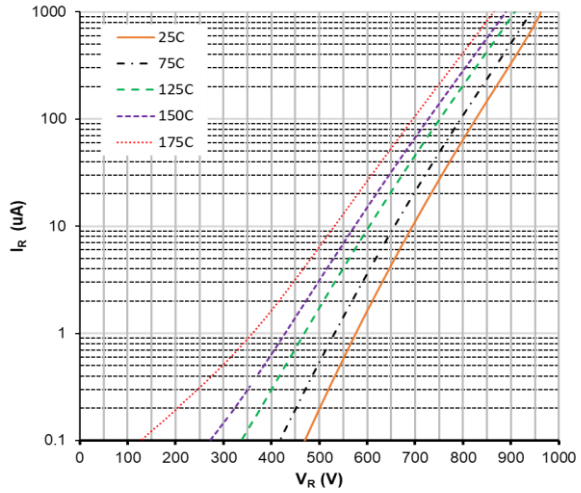


Figure 3. Reverse Characteristics

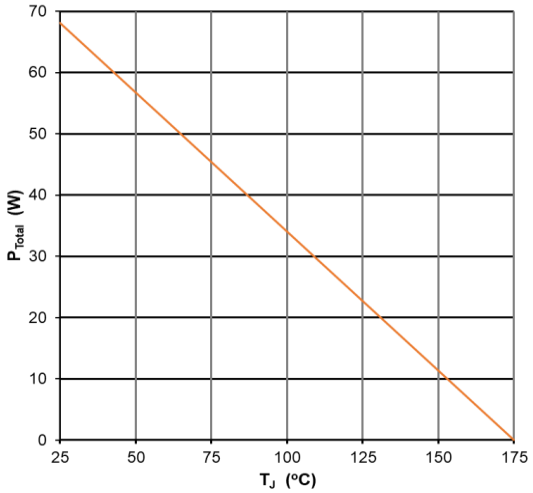


Figure 4. Power Derating

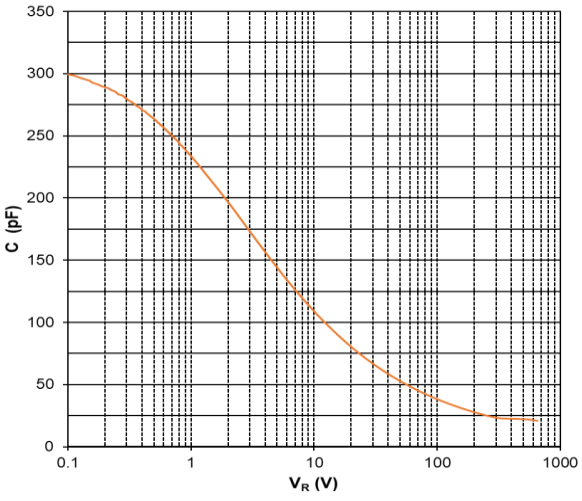


Figure 5. Capacitance vs Reverse Voltage

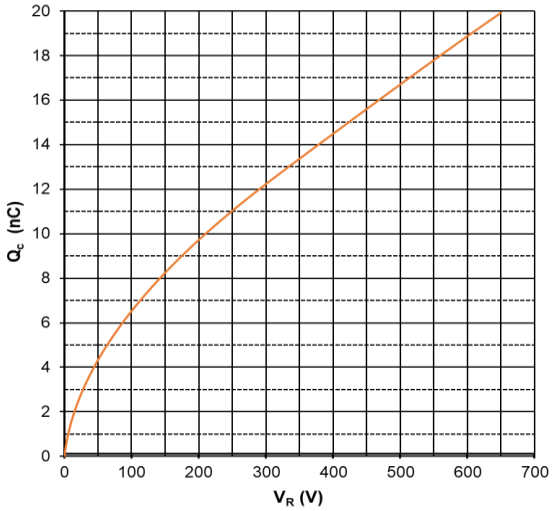
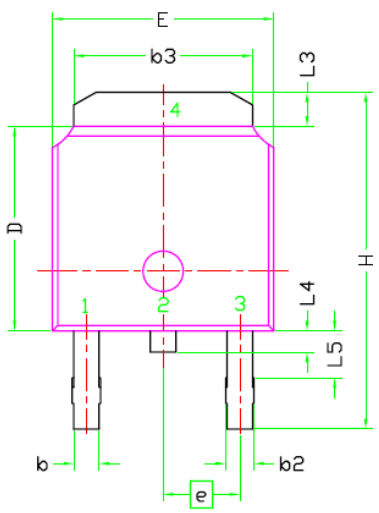
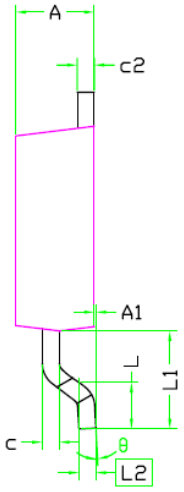


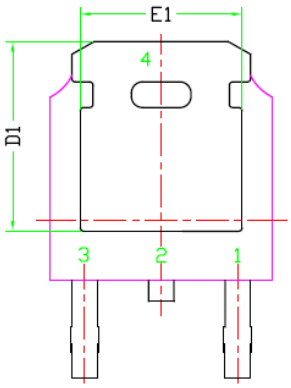
Figure 6. Recovery Charge vs Reverse Voltage

Package Dimensions

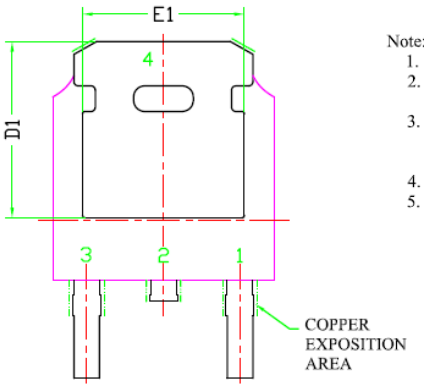
(DPAK Package)







SINGLE ROW(NEW)



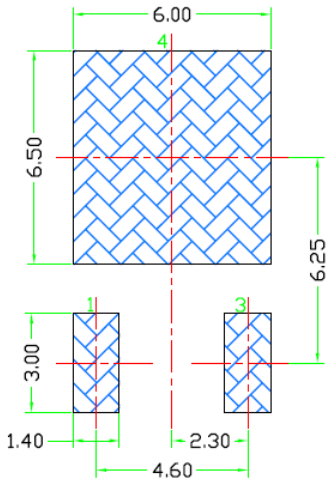
MATRIX L/F

SYMBOL	DIMENSIONAL REQMTS		
	MIN	NOM	MAX
E	6.40	6.60	6.731
L	1.40	1.52	1.77
L1	2.743 REF		
L2	0.508 BSC		
L3	0.89	--	1.27
L4	0.64	--	1.01
L5	--	--	--
D	6.00	6.10	6.223
H	9.40	10.00	10.40
b	0.64	0.76	0.88
b2	0.77	0.84	1.14
b3	5.21	5.34	5.46
e	2.286 BSC		
A	2.20	2.30	2.38
A1	0	--	0.127
c	0.46	0.50	0.60
c2	0.46	0.50	0.58
D1	5.21	--	--
E1	4.40	--	--

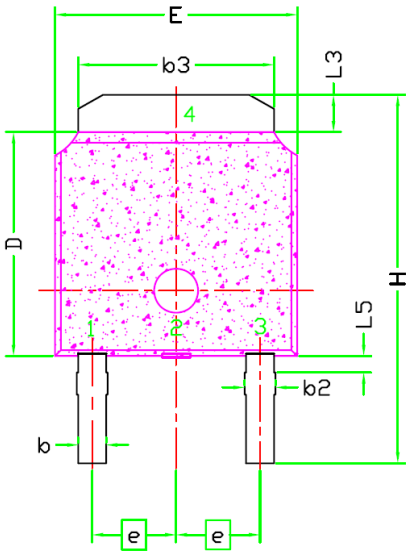
Note:

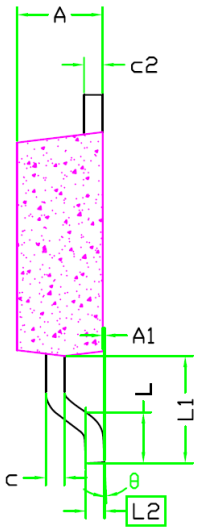
1. All Dimension Are In mm.
2. Package Body Sizes Exclude Mold Flash, Protrusion Or Gate Burrs. Mold Flash, Protrusion Or Gate Burrs Shall Not Exceed 0.10 mm Per Side.
3. Package Body Sizes Determined At The Outermost Extremes Of The Plastic Body Exclusive Of Mold Flash, Gate Burrs And Interlead Flash, But Including Any Mismatch Between The Top And Bottom Of The Plastic Body.
4. The Package Top May Be Smaller Than The Package Bottom.
5. Dimension "b" Does Not Include Dambar Protrusion. Allowable Dambar Protrusion Shall Be 0.10 mm Total In Excess Of "b" Dimension At Maximum Material Condition. The Dambar Cannot Be Located On The Lower Radius Of The Foot.

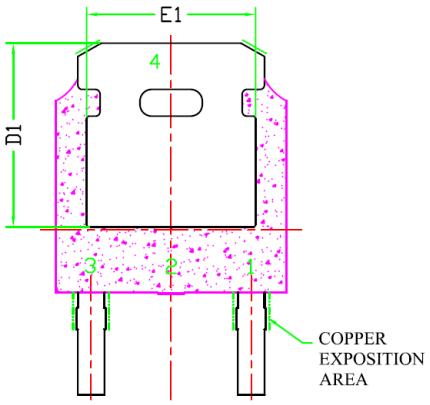
Land Pattern
(Only for Reference)



(DPAK Package)







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c2	0.46	0.50	0.58
D1	5.21	--	--
E1	4.40	--	--
θ	0°	--	10°

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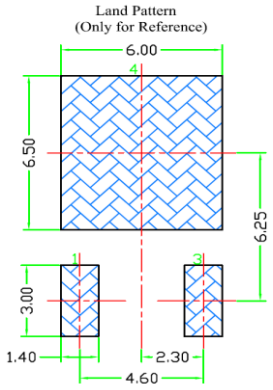

Ordering Information

Part Number	Package	Packing	Marking	Base Quantity
NF3D06065	DPAK	Tape & Reel	NF3D06065	2500
NF3D06065F	DPAK	Tape & Reel	NF3D06065F	2500