

P6KE6.8(C)A - P6KE440(C)A

Features

- Glass passivated junction.
- 600W Peak Pulse Power capability at 1.0 ms.
- Excellent clamping capability.
- Low incremental surge resistance.
- Fast response time; typically less than 1.0 ps from 0 volts to BV for unidirectional and 5.0 ns for bidirectional.
- Typical I_R less than 1.0 μ A above 10V.



DO-15

COLOR BAND DENOTES CATHODE ON UNIDIRECTIONAL DEVICES ONLY. NO COLOR BAND ON BIDIRECTIONAL DEVICES.

DEVICES FOR BIPOLAR APPLICATIONS

- Bidirectional types use CA suffix.
- Electrical Characteristics apply in both directions.

600 Watt Transient Voltage Suppressors

Absolute Maximum Ratings* T_A = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
P _{PPM}	Peak Pulse Power Dissipation at T _A =25°C, T _p =1ms	minimum 600	W
I _{PPM}	Peak Pulse Current	see table	A
P _D	Steady State Power Dissipation .375" lead length @ T _A = 75°C	5.0	W
I _{FSM}	Non-repetitive Peak Forward Surge Current superimposed on rated load (JEDEC method) (Note 1)	100	A
T _{stg}	Storage Temperature Range	-65 to +175	°C
T _J	Operating Junction Temperature	-65 to +175	°C

*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

Note 1: Measured on 8.3 ms single half-sine wave; Duty cycle = 4 pulses per minute maximum.

Transient Voltage Suppressors

(continued)

Electrical Characteristics

$T_A = 25^\circ\text{C}$ unless otherwise noted

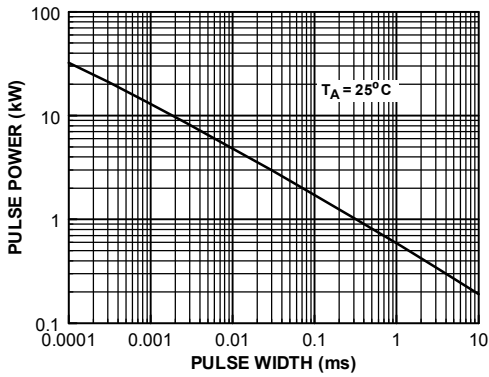
Uni-directional Bi-directional (C) Device	Reverse Stand-off Voltage V_{RWM} (V)	Breakdown Voltage V_{BR} (V)		Test Current I_T (mA)	Max Clamping Voltage @IPPM V_C (V)	Max Peak Pulse Surge Current I_{PPM} (A)	Max Reverse Leakage V_{RWM} I_R (uA)*
		min	max				
P6KE6.8(C)A	5.80	6.45	7.14	10	10.5	57.1	1000
P6KE7.5(C)A	6.40	7.13	7.88	1	11.3	53.1	500
P6KE8.2(C)A	7.02	7.79	8.61	1	12.1	50.0	200
P6KE9.1(C)A	7.78	8.65	9.55	1	13.4	45.0	50
P6KE10(C)A	8.55	9.50	10.5	1	14.5	41.0	10
P6KE11(C)A	9.4	10.5	11.6	1	15.6	38.0	5
P6KE12(C)A	10.2	11.4	12.6	1	16.7	36.0	5
P6KE13(C)A	11.1	12.4	13.7	1	18.2	33.0	5
P6KE15(C)A	12.8	14.3	15.8	1	21.2	28.0	5
P6KE16(C)A	13.6	15.2	16.8	1	22.5	27.0	5
P6KE18(C)A	15.3	17.1	18.9	1	25.2	24.0	5
P6KE20(C)A	17.1	19.0	21.0	1	27.7	22.0	5
P6KE22(C)A	18.8	20.9	23.1	1	30.6	20.0	5
P6KE24(C)A	20.5	22.8	25.2	1	33.2	18.1	5
P6KE27(C)A	23.1	25.7	28.4	1	37.5	16.0	5
P6KE30(C)A	25.6	28.5	31.5	1	41.4	14.5	5
P6KE33(C)A	28.2	31.4	34.7	1	45.7	13.2	5
P6KE36(C)A	30.8	34.2	37.8	1	49.9	12.0	5
P6KE39(C)A	33.3	37.1	41.0	1	53.9	11.2	5
P6KE43(C)A	36.8	40.9	45.2	1	59.3	10.1	5
P6KE47(C)A	40.2	44.7	49.4	1	64.8	9.3	5
P6KE51(C)A	43.6	48.5	53.6	1	70.1	8.6	5
P6KE56(C)A	47.8	53.2	58.8	1	77.0	7.8	5
P6KE62(C)A	53.0	58.9	65.1	1	85.0	7.1	5
P6KE68(C)A	58.1	64.6	71.4	1	92.0	6.5	5
P6KE75(C)A	64.1	71.3	78.8	1	103.0	5.8	5
P6KE82(C)A	70.1	77.9	86.1	1	113.0	5.3	5
P6KE91(C)A	77.8	86.5	95.5	1	125.0	4.8	5
P6KE100(C)A	85.5	95.0	105.0	1	137.0	4.4	5
P6KE110(C)A	94.0	105.0	116.0	1	152.0	4.0	5
P6KE120(C)A	102.0	114.0	126.0	1	165.0	3.6	5
P6KE130(C)A	111.0	124.0	137.0	1	179.0	3.4	5
P6KE150(C)A	128.0	143.0	158.0	1	207.0	2.9	5
P6KE160(C)A	136.0	152.0	168.0	1	219.0	2.7	5
P6KE170(C)A	145.0	162.0	179.0	1	234.0	2.6	5
P6KE180(C)A	154.0	171.0	189.0	1	246.0	2.4	5
P6KE200(C)A	171.0	190.0	210.0	1	274.0	2.2	5
P6KE220(C)A	185.0	209.0	231.0	1	328.0	1.9	5
P6KE250(C)A	214.0	237.0	263.0	1	344.0	1.8	5
P6KE300(C)A	256.0	285.0	315.0	1	414.0	1.5	5
P6KE350(C)A	300.0	332.0	368.0	1	482.0	1.3	5
P6KE400(C)A	342.0	380.0	420.0	1	548.0	1.1	5
P6KE440(C)A	376.0	418.0	462.0	1	602.0	1.0	5

* For bidirectional parts with $V_{RWM} < 10\text{V}$, the I_R max limit is doubled.

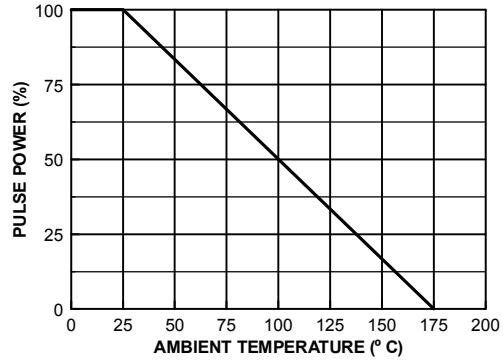
P6KE6.8(C)A - P6KE440(C)A

Typical Characteristics

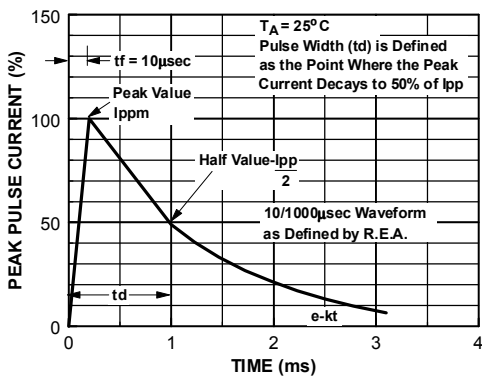
Peak Pulse Power Rating Curve



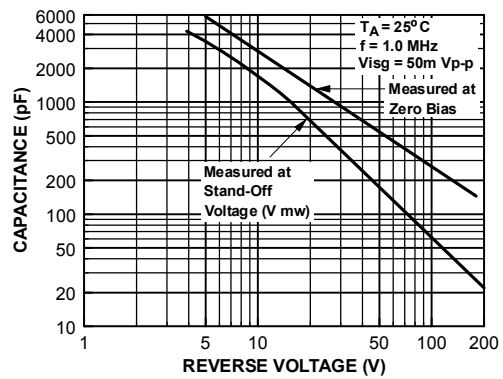
Pulse Derating Curve



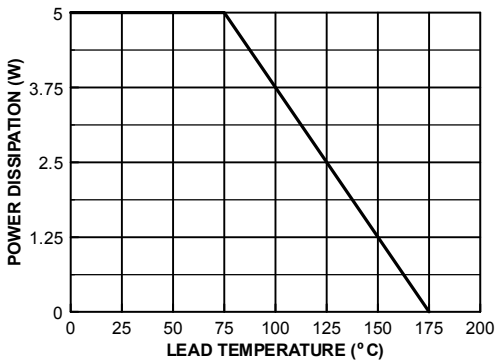
Pulse Waveform



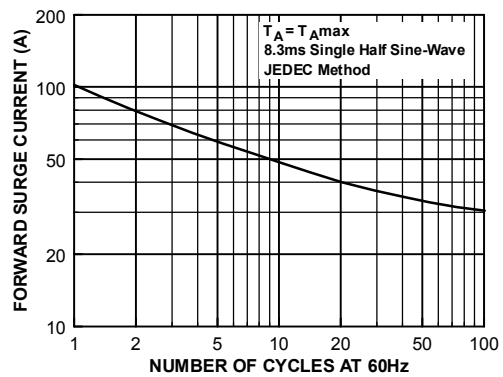
Junction Capacitance - Unidirectional



Steady State Power Derating Curve



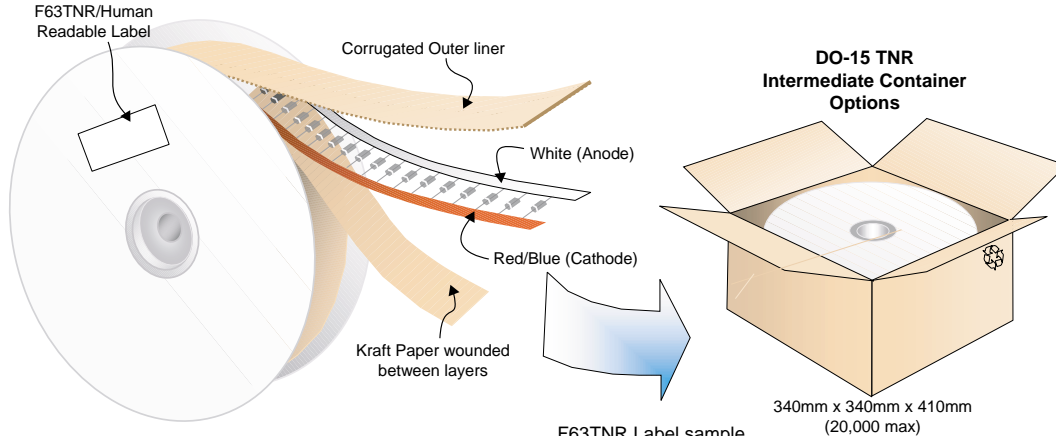
Non-Repetitive Surge Current



DO-15 Tape and Reel Data



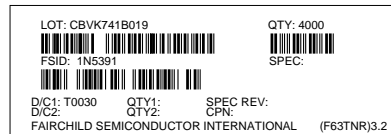
DO-15 Packaging Configuration: Figure 1.0



DO-15 Packaging Information Table : Figure 2.0

DO-15 Packaging Information	
Packaging Option	Under package code P2
Packaging type	TNR
Qty per Reel/Tube/Bag	4,000
Reel Size (inch diameter)	13
Inside Tape Spacing (mm)	52
Int Box Dimension (mm)	340x340x410
Max qty per Box	20,000
Weight per unit (gm)	0.400
Weight per Reel (kg)	1.500
Note/Comments	

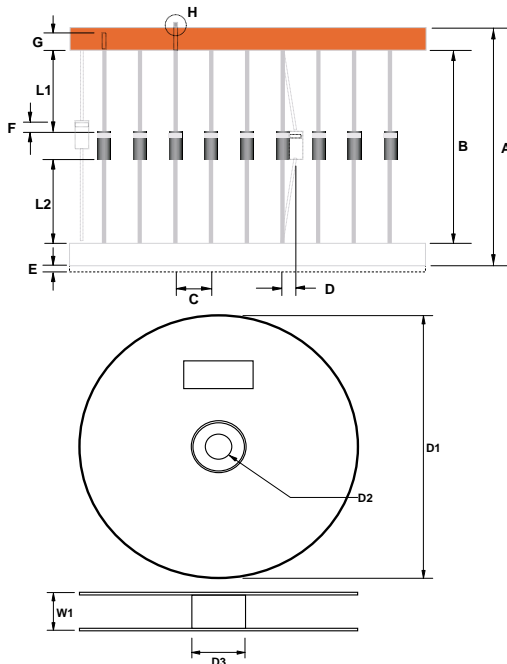
F63TNR Label sample



Human Readable Label sample



DO-15 Taping Dimension: Figure 5.0



TAPING DIMENSIONS

	INCH	MM	MILS	NOTES
A	2.520 +0.066/ -0.027	64.00 +1.69/ -0.69	2519 +66.5/ -27.0	Overall width
	1.496 +0.059/ -0.039	38.00 +1.5 -1.0	1496 +59 -39	
B	2.047±0.027	52 ±0.69	2047±27	Inside Tape Spacing
C	0.200 ±0.0157	5.08 ±0.40	200 ±15.7	Component Pitch
D	0.047(max)	1.2(max)	47(max)	Component Misalignment
E	0.022(max)	0.55(max)	22(max)	Tape Mismatch
F	0.027(max)	±0.69	±27	Units in line w/ one another
G	0.126(min)	3.2(min)	126(min)	Lead amount between tapes
H	0	0	0	Lead amount beyond tapes
L1-L2	±0.027	±0.69	±27	Delta between two leads

REEL DIMENSIONS

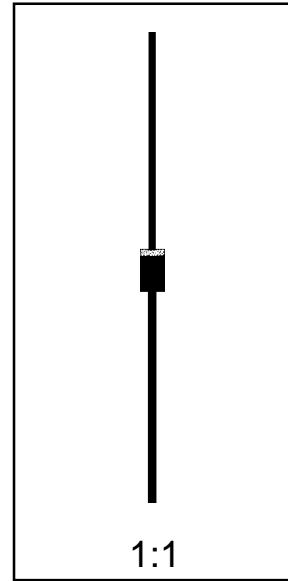
ITEM DESCRIPTION	SYMBOL	MINIMUM	MAXIMUM
Reel Diameter	D1	13.875	14.125
Arbor Hole Diameter (Standard)	D2	1.245	1.255
Core Diameter	D3	3.190	3.310
Flange to Flange Outer Width	W1		3.400

Note: All Dimensions are in inches

DO-15 Package Dimensions



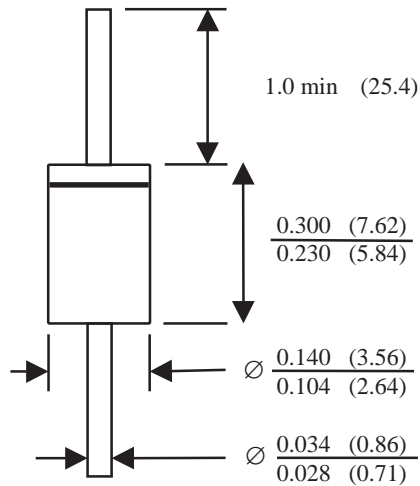
DO-15 (FS PKG Code P2)



Scale 1:1 on letter size paper

Dimensions shown below are in:
inches [millimeters]

Part Weight per unit (gram): 0.4



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