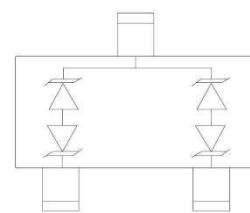


Features

- ◆ 300 Watts peak pulse power ($t_p = 8/20\mu s$)
- ◆ Transient protection for high speed data lines to IEC 61000-4-2 (ESD) $\pm 30kV$ (air), $\pm 30kV$ (contact)
IEC 61000-4-4 (EFT) 40A (5/50ns)
- ◆ Working voltages : 3V,5V,12V,15V,24V
- ◆ Protects two bidirectional line
- ◆ Low operating and clamping voltages
- ◆ Solid-state silicon avalanche technology



SOT-23

Applications

- ◆ Notebooks, Desktops, Servers and Video Graphics Cards
- ◆ USB Power & Data Line Protection
- ◆ Monitors and Flat Panel Displays
- ◆ I²C Bus Protection
- ◆ Portable Instrumentation
- ◆ Set Top Box

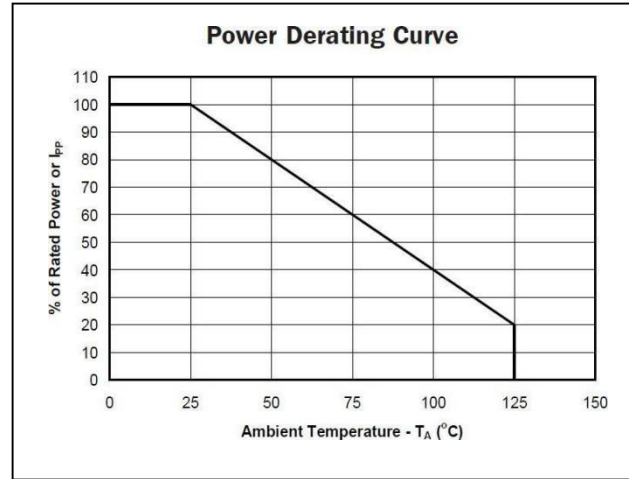
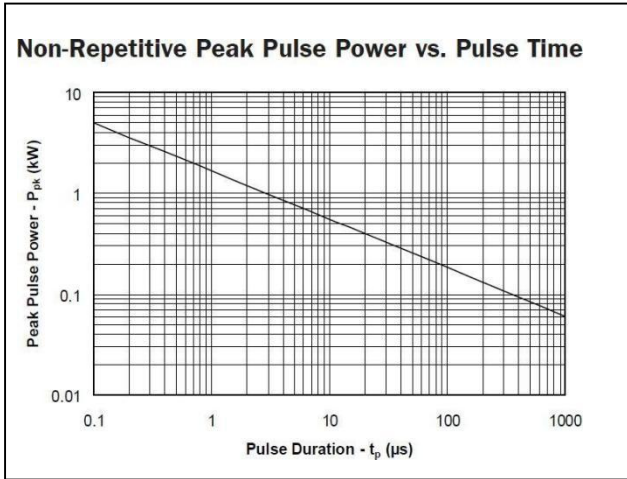
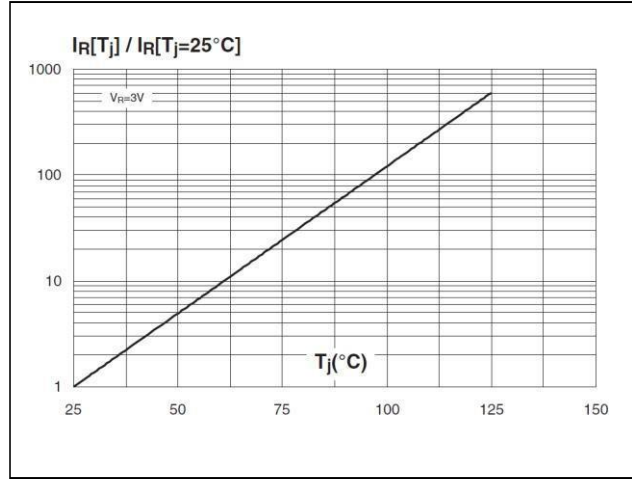
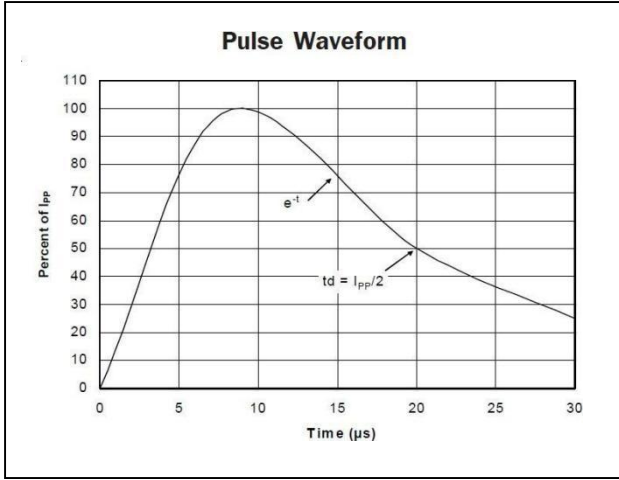
Electrical Characteristics @ $T_a = 25^\circ C$ unless otherwise

PART NUMBER	V_{RWM}	V_B	I_T	$V_C@1A$	V_C		I_R	C_T
	(V) (max.)	(V) (min.)	(mA)	(V) (max.)	(V) (max.)	(@A)	(μA) (max.)	(pF) (max.)
KNESD3V3L2BT	3.3	4	1	7.0	14	18	1	100
KNESD5V0L2BT	5	6	1	9.8	18	13	1	75
KNESD12VL2BT	12	13.3	1	19	32	5	1	20
KNESD15VL2BT	15	16.7	1	24	38	5	1	20
KNESD24VL2BT	24	26.7	1	43	52	5	1	35

Maximum Rating @ $T_a = 25^\circ C$ unless otherwise specified

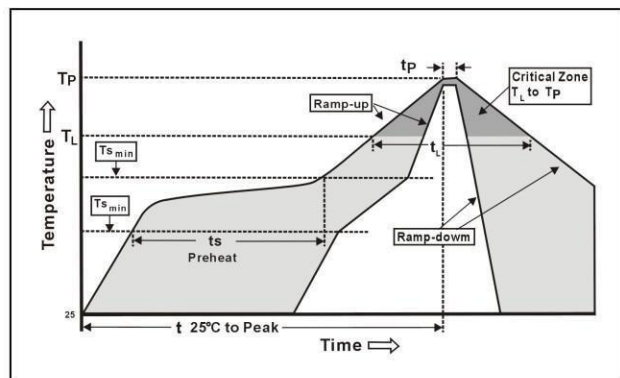
Symbol	Parameter	Ratings	Units
P_{PK}	Peak Pulse Power ($t_p = 8/20\mu s$)	300	Watts
T_L	Lead Soldering Temperature	260(10sec.)	$^\circ C$
T_J	Operating Temperature	-55 to +125	$^\circ C$
T_{STG}	Storage Temperature	-55 to +150	$^\circ C$

Typical Characteristics @ Ta=25°C unless otherwise specified

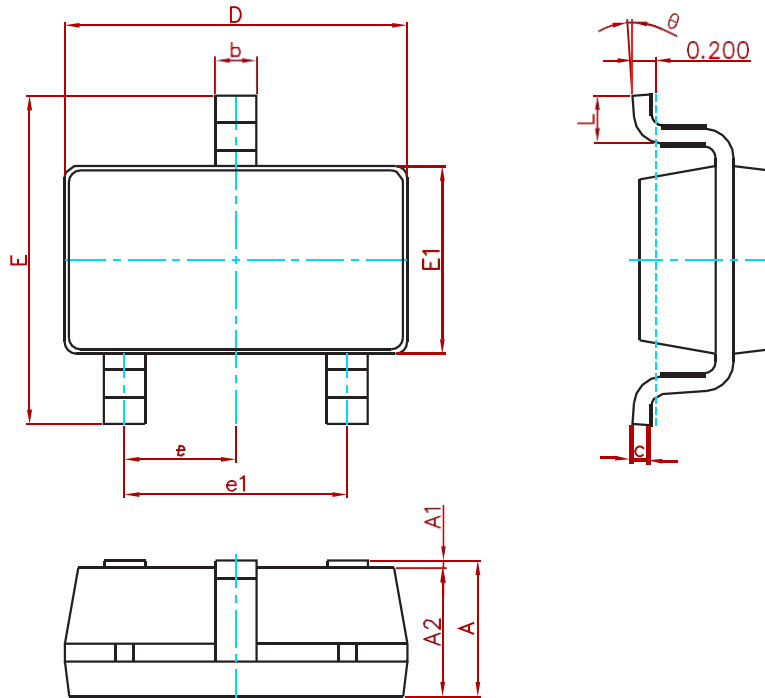


Soldering Parameters

Reflow Condition		Fb – Free assembly
Pre Heat	- Temperature Min ($T_{s(Min)}$)	150°C
	- Temperature Max ($T_{s(Max)}$)	200°C
	- Time (Min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus) Temp (T_L) to peak		3°C/second Max
$T_{s(Max)}$ to T_L - Ramp-up Rate		3°C/second Max
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Temperature (t_L)	60 – 150 seconds
Peak Temperature (T_p)		250 ^{+0/-5} °C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second Max
Time 25°C to peak Temperature (T_p)		8 minutes Max.
Do not exceed		260°C

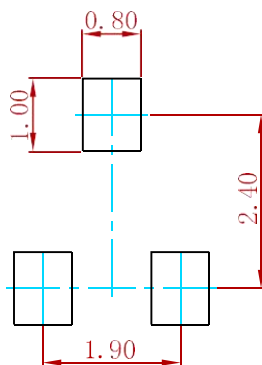


PACKAGE MECHANICAL DATA



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

Suggested Pad Layout



Note:
 1. Controlling dimension: in millimeters.
 2. General tolerance: ± 0.05mm.
 3. The pad layout is for reference purposes only.

REEL SPECIFICATION

P/N	PKG	QTY
KNESDXXXL2BT	SOT-23	3000