

Features

- 150V/240A,
 $R_{DS(ON)} = 3m\Omega(Typ.)@V_{GS}=10V$
- Excellent $Q_G \times R_{DS(on)}$ product(FOM)
- SGT Technology
- 100% Avalanche Tested
- Good Thermal Performance

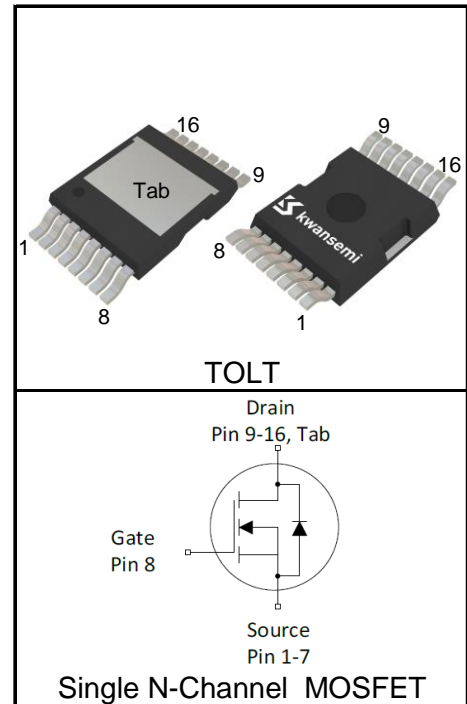
Applications

- Electric Power Tool
- Battery Power Management



Halogen-Free

Pin Description



Absolute Maximum Ratings

Symbol	Parameter	Rating	Unit
Common Ratings ($T_C=25^\circ\text{C}$ Unless Otherwise Noted)			
V_{DSS}	Drain-Source Voltage	150	V
V_{GSS}	Gate-Source Voltage	± 20	
T_{Jmax}	Maximum Junction Temperature	175	$^\circ\text{C}$
T_J, T_{STG}	Operating and Storage Temperature Range	-55 to 175	$^\circ\text{C}$
I_S	Diode Continuous Forward Current	$T_C=25^\circ\text{C}$	240 A
Mounted on Large Heat Sink			
$I_{DP}^{①}$	Pulse Drain Current	$T_C=25^\circ\text{C}$	960 A
$I_D^{②}$	Continuous Drain Current($V_{GS}=10V$)	$T_C=25^\circ\text{C}$	240 A
		$T_C=100^\circ\text{C}$	169 A
P_D	Maximum Power Dissipation	$T_C=25^\circ\text{C}$	535 W
		$T_C=100^\circ\text{C}$	267 W
$R_{\theta JC}$	Thermal Resistance-Junction to Case	0.28	$^\circ\text{C}/\text{W}$
$R_{\theta JA}^{③}$	Thermal Resistance-Junction to Ambient	40	$^\circ\text{C}/\text{W}$
Drain-Source Avalanche Ratings			
$E_{AS}^{④}$	Avalanche Energy, Single Pulsed	1722	mJ

Electrical Characteristics ($T_C=25^\circ\text{C}$ Unless Otherwise Noted)

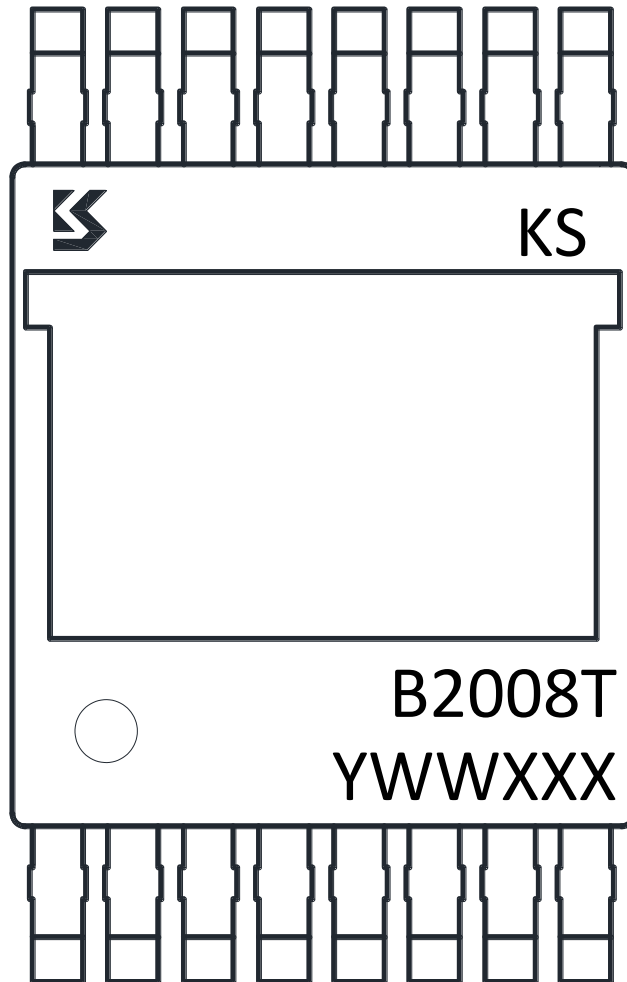
Symbol	Parameter	Test Condition	KSB2008LA3T			Unit
			Min.	Typ.	Max.	
Static Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_{DS}=250\mu A$	150			V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=150V, V_{GS}=0V$			1	μA
		$T_J=125^\circ C$			30	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_{DS}=250\mu A$	2	3	4	V
I_{GSS}	Gate Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$			± 100	nA
$R_{DS(ON)}^{(5)}$	Drain-Source On-state Resistance	$V_{GS}=10V, I_{DS}=40A$		3	3.8	$m\Omega$
		$V_{GS}=6V, I_{DS}=20A$		3.5	4.5	$m\Omega$
Diode Characteristics						
$V_{SD}^{(5)}$	Diode Forward Voltage	$I_{SD}=40A, V_{GS}=0V$		0.78	1.2	V
t_{rr}	Reverse Recovery Time	$I_{SD}=40A, dI_{SD}/dt=100A/\mu s$		76		ns
Q_{rr}	Reverse Recovery Charge			213		nC
Dynamic Characteristics⁽⁶⁾						
R_G	Gate Resistance	$V_{GS}=0V, V_{DS}=0V, F=1MHz$		2.8		Ω
C_{iss}	Input Capacitance	$V_{GS}=0V,$ $V_{DS}=75V,$ Frequency=200KHz		10775		pF
C_{oss}	Output Capacitance			850		
C_{rss}	Reverse Transfer Capacitance			15		
$t_{d(ON)}$	Turn-on Delay Time	$V_{DD}=75V, I_{DS}=40A,$ $V_{GEN}=10V, R_G=3\Omega$		24		ns
t_r	Turn-on Rise Time			98		
$t_{d(OFF)}$	Turn-off Delay Time			121		
t_f	Turn-off Fall Time			103		
Gate Charge Characteristics⁽⁶⁾						
Q_g	Total Gate Charge	$V_{DS}=75V, V_{GS}=10V,$ $I_{DS}=40A$		141		nC
Q_{gs}	Gate-Source Charge			45		
Q_{gd}	Gate-Drain Charge			21		

Notes:

- ① Pulse width limited by safe operating area.
- ② Calculated continuous current based on maximum allowable junction temperature.
- ③ When mounted on 1 inch square copper board, $t \leq 10\text{sec}$. The value in any given application depends on the user's specific board design.
- ④ Limited by T_{Jmax} , Starting $T_J = 25^\circ C$, $I_{ASmax} = 83A$, $L=0.5mH$, $V_{DD} = 48V$, $R_G = 25\Omega$, $V_{GS}=10V$. Part not recommended for use above this value. 100% Final Test at $I_{AS}=62A$, $L=0.5mH$.
- ⑤ Pulse test; Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- ⑥ Guaranteed by design, not subject to production testing.

Ordering and Marking Information

Device	Package	Packaging	Quantity	Reel Size	Tape width
KSB2008LA3T	TOLT	Tape&Reel	1200	13"	24mm

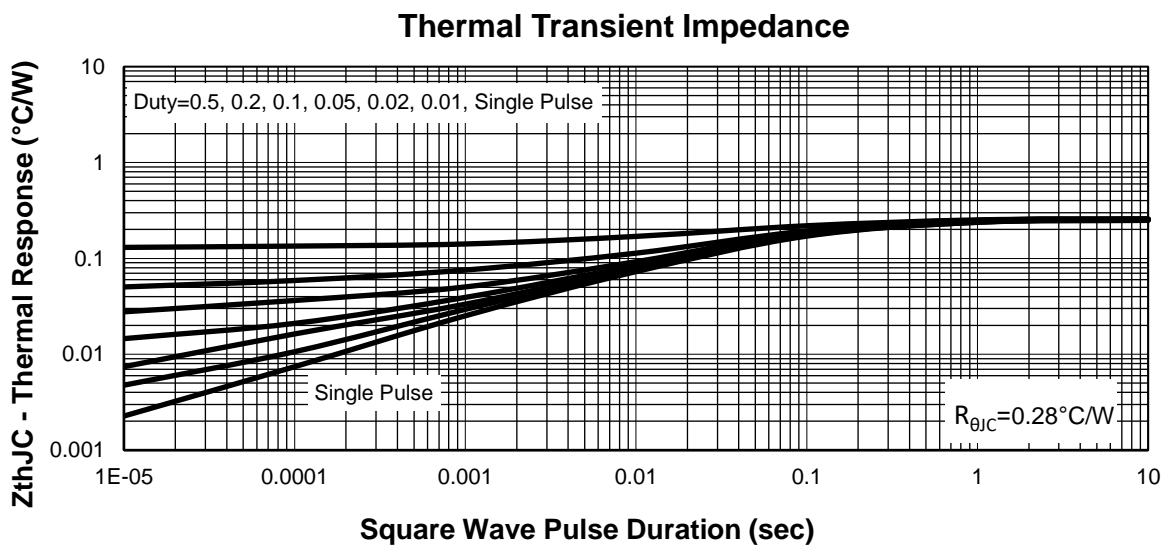
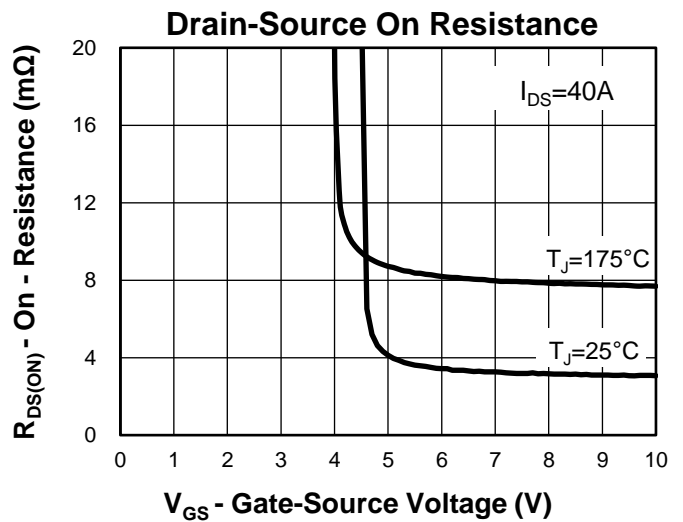
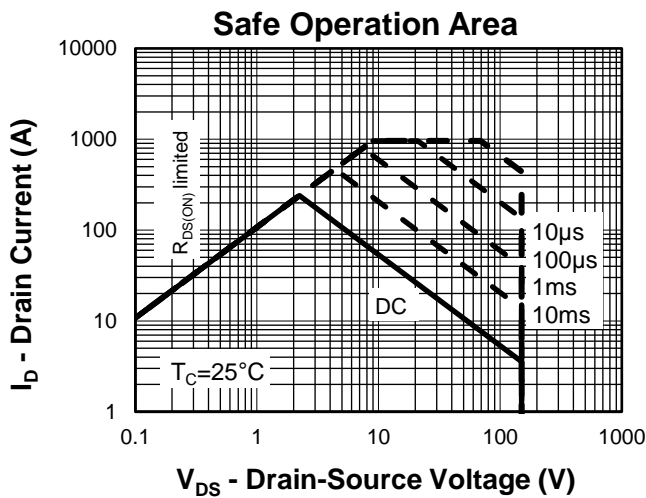
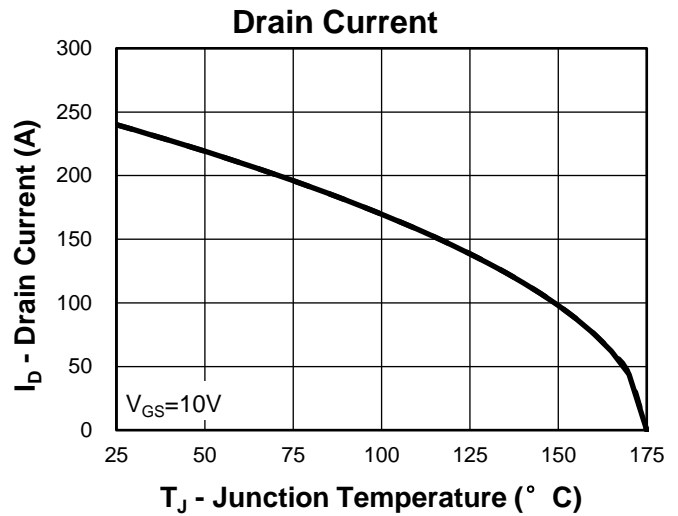
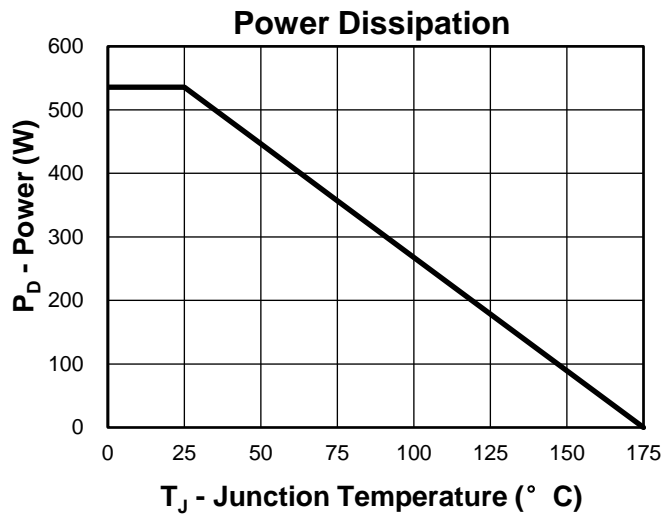


1st Line: Kwansemi LOGO, Kwansemi Code(KS)

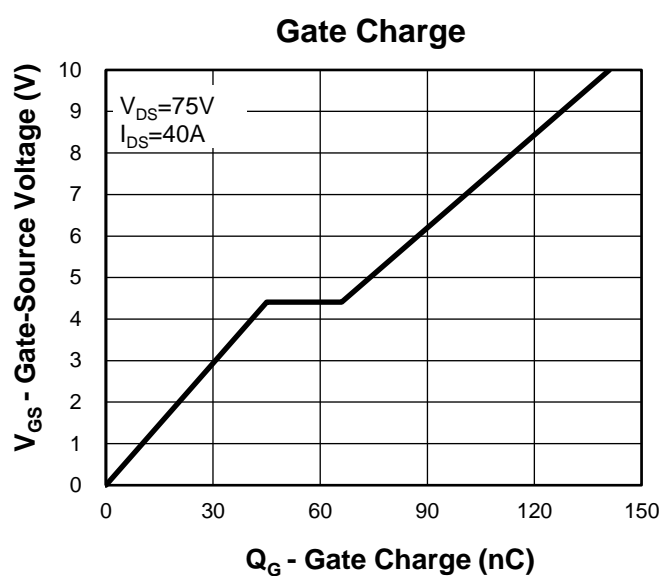
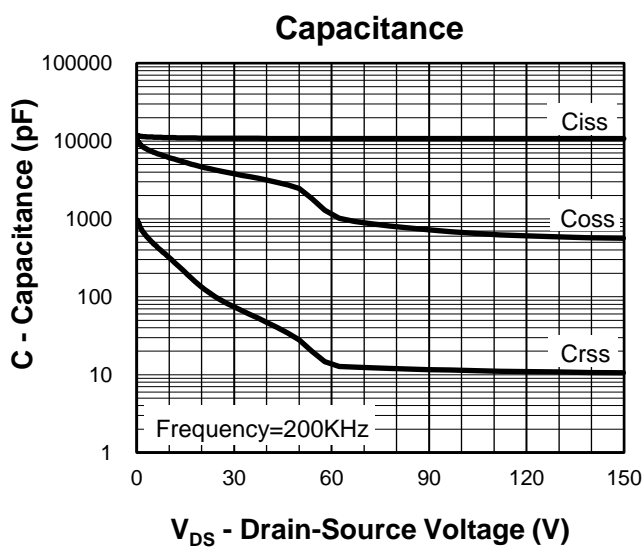
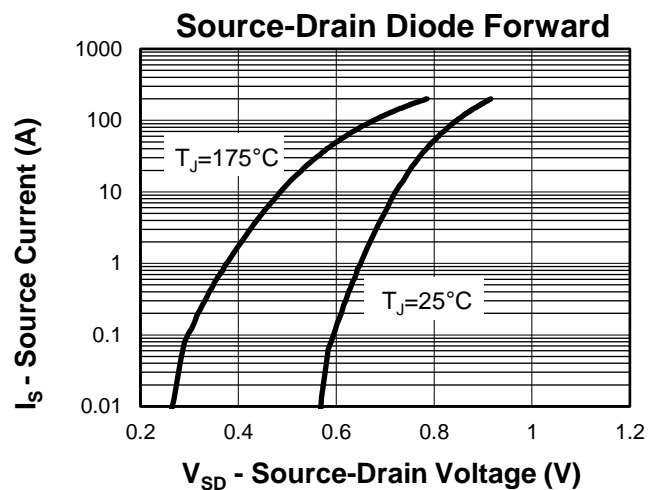
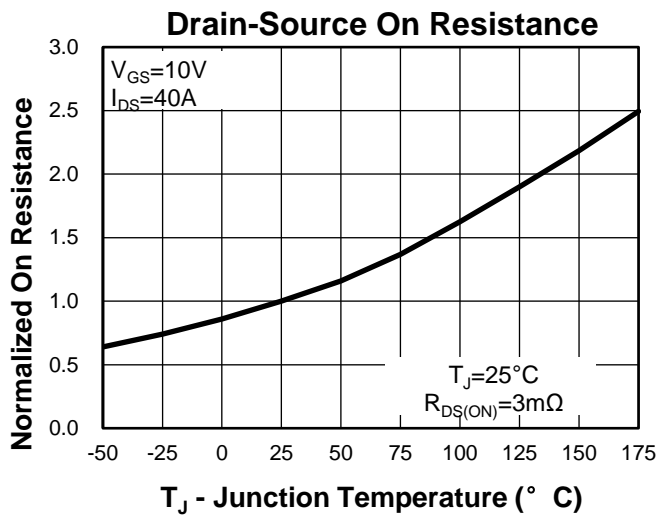
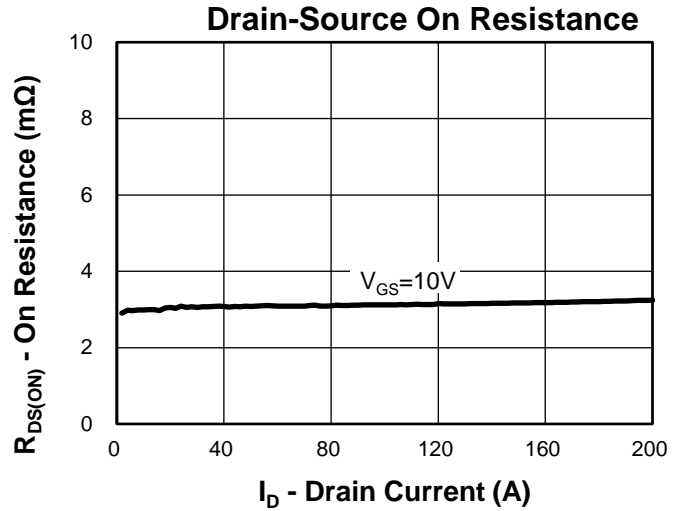
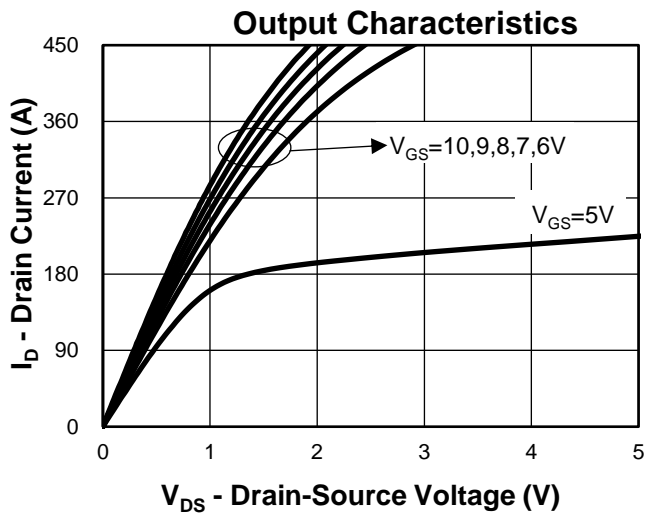
2rd Line: Part Number(B2008T)

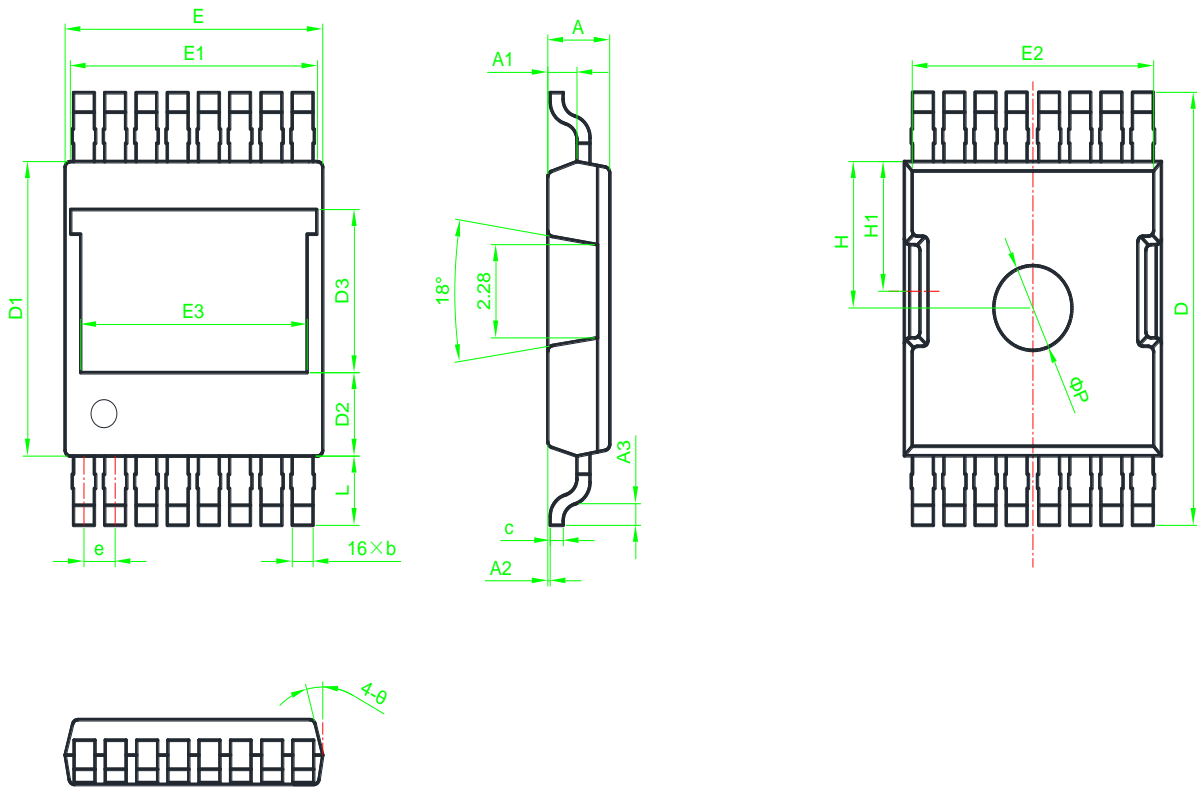
3th Line: Lot Number(YWWXXX)

Typical Characteristics



Typical Characteristics



Package Information
TOLT


SYMBOL	MM			INCH			SYMBOL	MM			INCH		
	MIN	NOM	MAX	MIN	NOM	MAX		MIN	NOM	MAX	MIN	NOM	MAX
A	2.25	2.30	2.35	0.089	0.091	0.093	E	9.70	9.90	10.10	0.382	0.390	0.398
A1	1.00	1.05	1.10	0.039	0.041	0.043	E1	9.46REF			0.372REF		
A2	0.01	0.08	0.16	0.000	0.003	0.006	E2	9.25REF			0.364REF		
A3	1.50REF			0.059REF			E3	8.70REF			0.343REF		
b	0.68	0.74	0.78	0.027	0.029	0.031	e	1.18	1.20	1.22	0.046	0.047	0.048
c	0.45	0.50	0.55	0.018	0.020	0.022	H	5.00	5.20	5.40	0.197	0.205	0.213
D	14.80	15.00	15.20	0.583	0.591	0.598	H1	4.40	4.60	4.80	0.173	0.181	0.189
D1	10.00	10.10	10.30	0.394	0.398	0.406	L	2.40	2.45	2.50	0.094	0.096	0.098
D2	2.60	2.80	3.00	0.102	0.110	0.118	φP	2.80	3.00	3.20	0.110	0.118	0.126
D3	5.77REF			0.227REF			θ	5°	*	9°	5°	*	9°

Note: Dimensions do not inclusive burrs and mold flash.

Avalanche Test Circuit and Waveforms



Switching Time Test Circuit and Waveforms



Diode Recovery Test Circuit and Waveforms



Gate Charge Test Circuit and Waveform



Customer Service

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