

### Features

- 85V/260A,  
 $R_{DS(ON)} = 2.2m\Omega(Typ.)@V_{GS}=10V$
- Excellent  $Q_G \times R_{DS(on)}$  product(FOM)
- SGT Technology
- 100% Avalanche Tested
- Good Thermal Performance

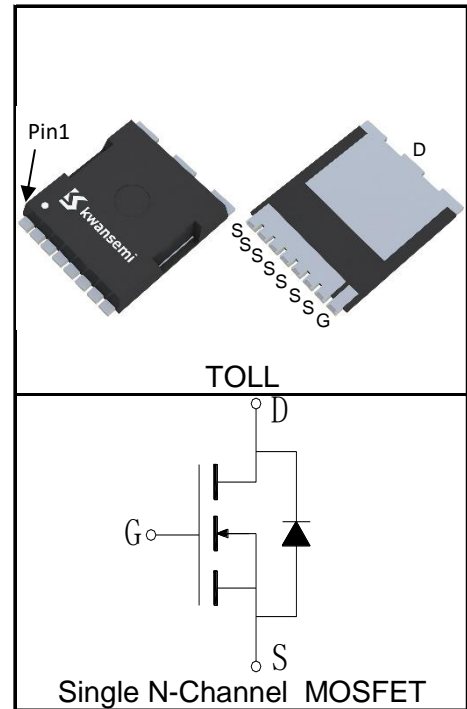
### Applications

- Motor Control
- Battery Power Management



Halogen-Free

### Pin Description



### Absolute Maximum Ratings

Symbol	Parameter	Rating	Unit	
<b>Common Ratings</b> ( $T_C=25^\circ\text{C}$ Unless Otherwise Noted)				
$V_{DSS}$	Drain-Source Voltage	85	V	
$V_{GSS}$	Gate-Source Voltage	$\pm 20$		
$T_J$	Maximum Junction Temperature	175	$^\circ\text{C}$	
$T_{STG}$	Storage Temperature Range	-55 to 175	$^\circ\text{C}$	
$I_S$	Diode Continuous Forward Current	$T_C=25^\circ\text{C}$	260	A
<b>Mounted on Large Heat Sink</b>				
$I_{DP}^{①}$	300 $\mu\text{s}$ Pulse Drain Current Tested	$T_C=25^\circ\text{C}$	1040	A
$I_D^{②}$	Continuous Drain Current( $V_{GS}=10V$ )	$T_C=25^\circ\text{C}$	260	A
		$T_C=100^\circ\text{C}$	184	
$P_D$	Maximum Power Dissipation	$T_C=25^\circ\text{C}$	306	W
		$T_C=100^\circ\text{C}$	153	
$R_{\theta JC}$	Thermal Resistance-Junction to Case	0.49	$^\circ\text{C/W}$	
$R_{\theta JA}^{③}$	Thermal Resistance-Junction to Ambient	40	$^\circ\text{C/W}$	
<b>Drain-Source Avalanche Ratings</b>				
$E_{AS}^{④}$	Avalanche Energy, Single Pulsed	529	mJ	

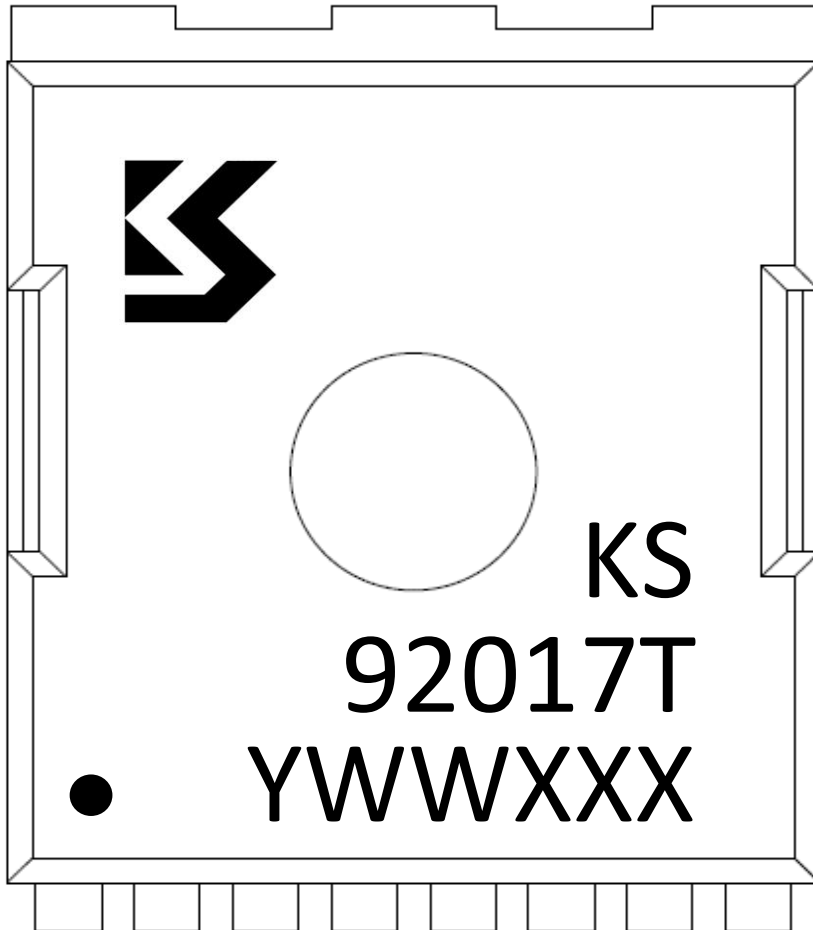
**Electrical Characteristics** ( $T_C=25^\circ\text{C}$  Unless Otherwise Noted)

Symbol	Parameter	Test Condition	KS92017LAT			Unit
			Min.	Typ.	Max.	
<b>Static Characteristics</b>						
$BV_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_{DS}=250\mu A$	85	92		V
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS}=80V, V_{GS}=0V$			1	$\mu A$
		$T_J=125^\circ\text{C}$			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	$V_{GS}=\pm 20V, V_{DS}=0V$			$\pm 100$	nA
$R_{DS(ON)}^{(5)}$	Drain-Source On-state Resistance	$V_{GS}=10V, I_{DS}=40A$		2.2	2.8	m $\Omega$
<b>Diode Characteristics</b>						
$V_{SD}^{(5)}$	Diode Forward Voltage	$I_{SD}=40A, V_{GS}=0V$		0.83	1.2	V
$t_{rr}$	Reverse Recovery Time	$I_{SD}=40A, dI_{SD}/dt=100A/\mu s$		47		ns
$Q_{rr}$	Reverse Recovery Charge				68	
<b>Dynamic Characteristics<sup>(6)</sup></b>						
$R_G$	Gate Resistance	$V_{GS}=0V, V_{DS}=0V, F=1\text{MHz}$		1.6		$\Omega$
$C_{iss}$	Input Capacitance	$V_{GS}=0V,$ $V_{DS}=40V,$ Frequency=1.0MHz		4330		pF
$C_{oss}$	Output Capacitance			1325		
$C_{riss}$	Reverse Transfer Capacitance			65		
$t_{d(ON)}$	Turn-on Delay Time	$V_{DD}=40V, I_{DS}=40A,$ $V_{GEN}=10V, R_G=3\Omega$		17		ns
$t_r$	Turn-on Rise Time			29		
$t_{d(OFF)}$	Turn-off Delay Time			41		
$t_f$	Turn-off Fall Time			15		
<b>Gate Charge Characteristics<sup>(6)</sup></b>						
$Q_g$	Total Gate Charge	$V_{DS}=40V, V_{GS}=10V,$ $I_{DS}=40A$		65		nC
$Q_{gs}$	Gate-Source Charge			16		
$Q_{gd}$	Gate-Drain Charge			13		

- 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  $T_{Jmax}$ ,  $I_{AS}=46A$ ,  $L=0.5\text{mH}$ ,  $V_{DD}=48V$ ,  $R_G=25\Omega$ , Starting  $T_J=25^\circ\text{C}$ , 100% tested and guaranteed.
  - ⑤ Pulse test; Pulse width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$ .
  - ⑥ Guaranteed by design, not subject to production testing.

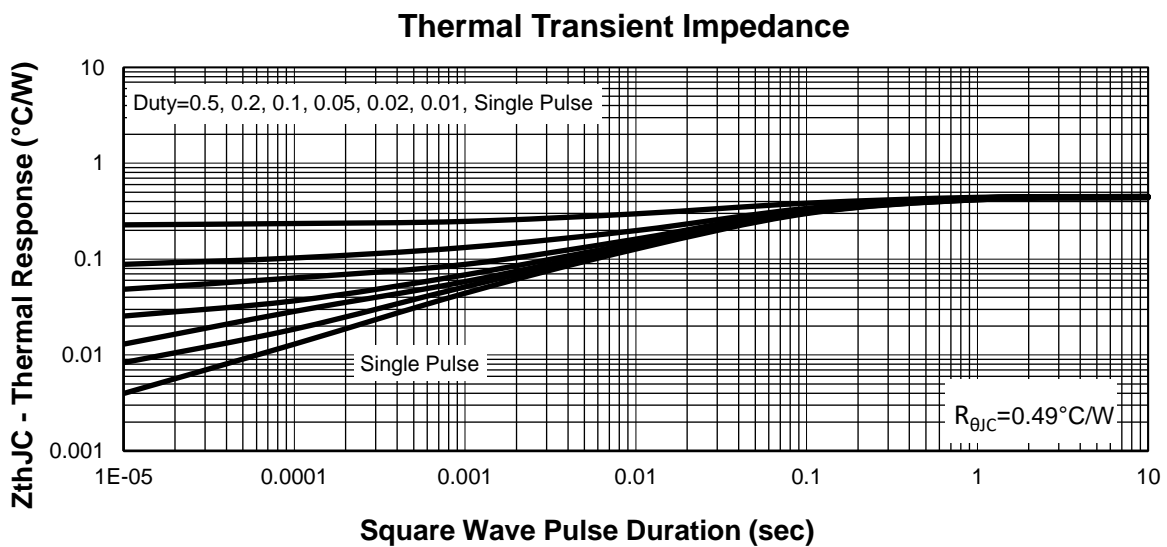
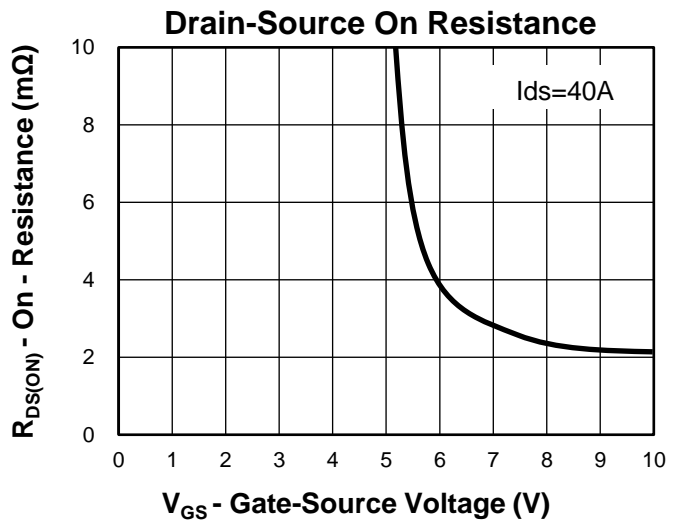
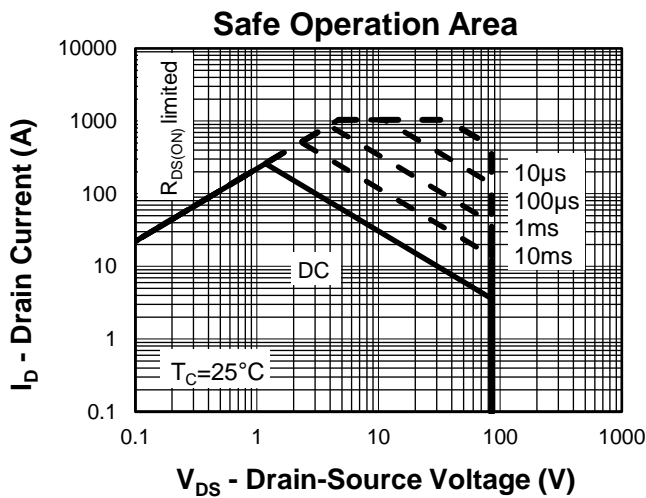
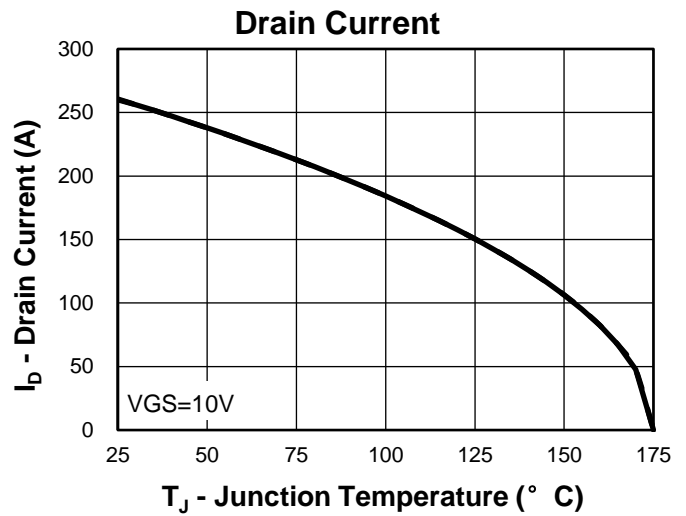
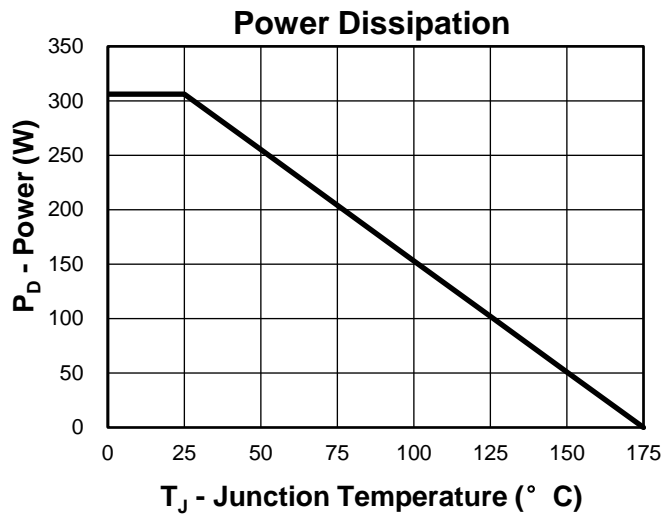
**Ordering and Marking Information**

Device	Package	Packaging	Quantity	Reel Size	Tape width
KS92017LAT	TOLL	Tape&Reel	2000	13"	24mm

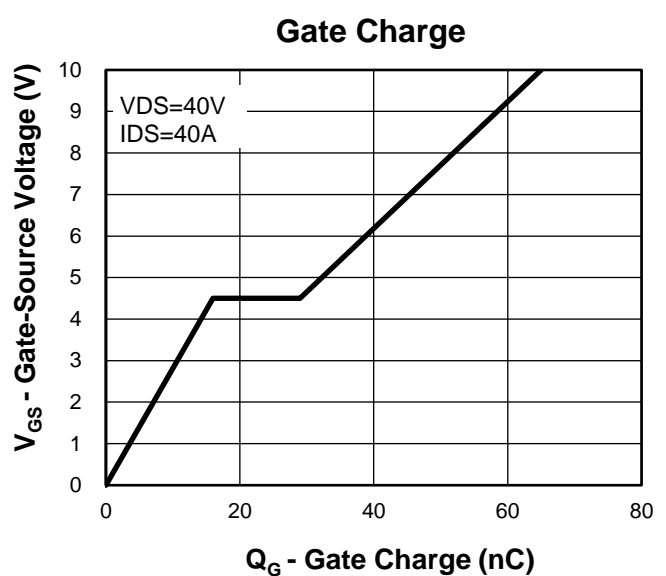
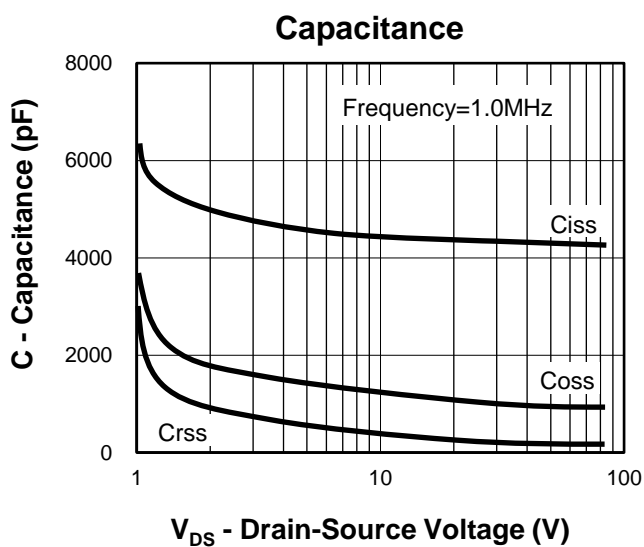
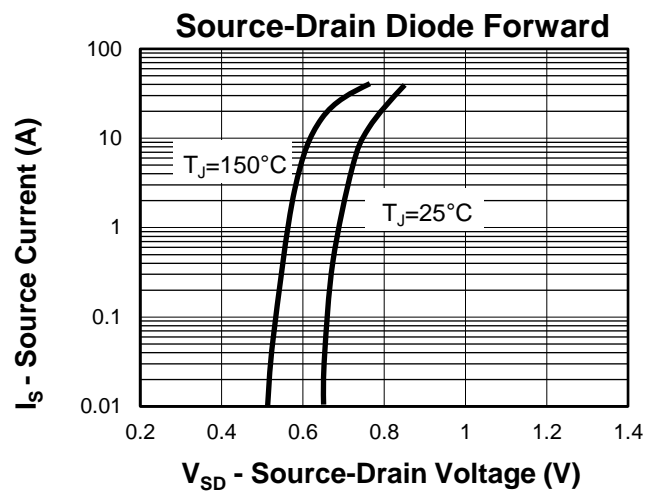
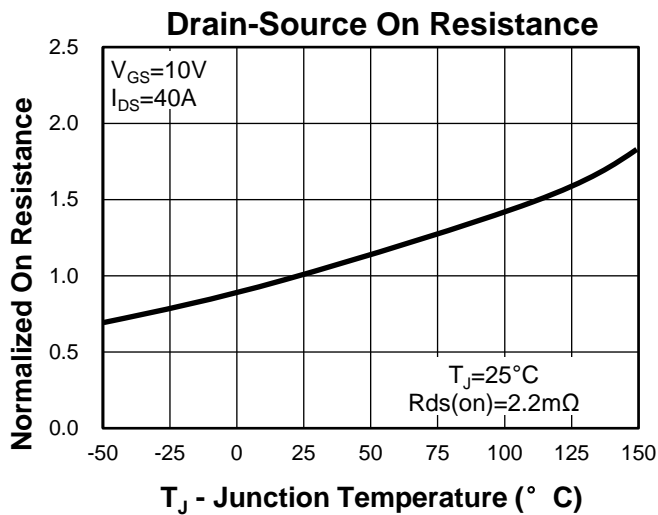
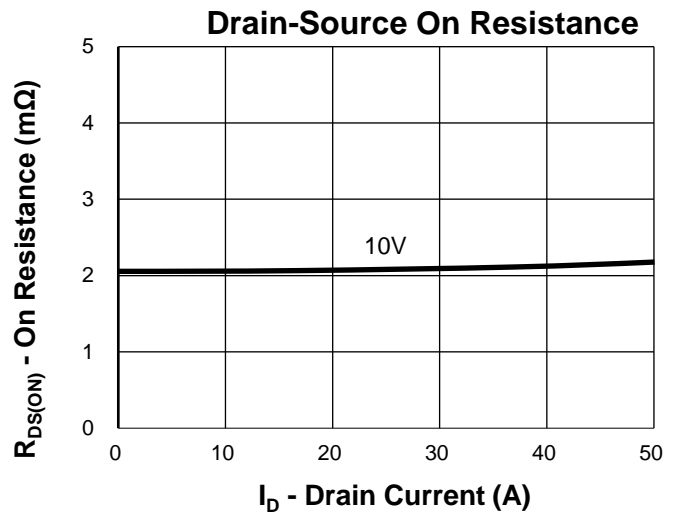
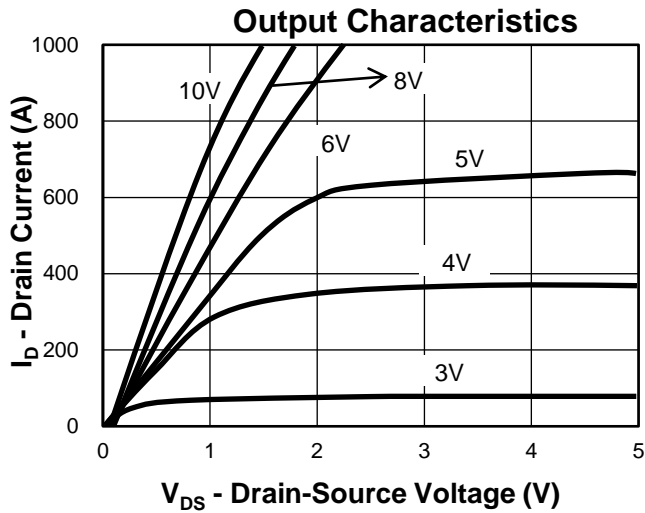


- 1st Line: Kwansemi LOGO
- 2nd Line: Kwansemi Code(KS)
- 3rd Line: Part Number(92017T)
- 4th Line: Lot Number(YWWXXX)

### Typical Characteristics

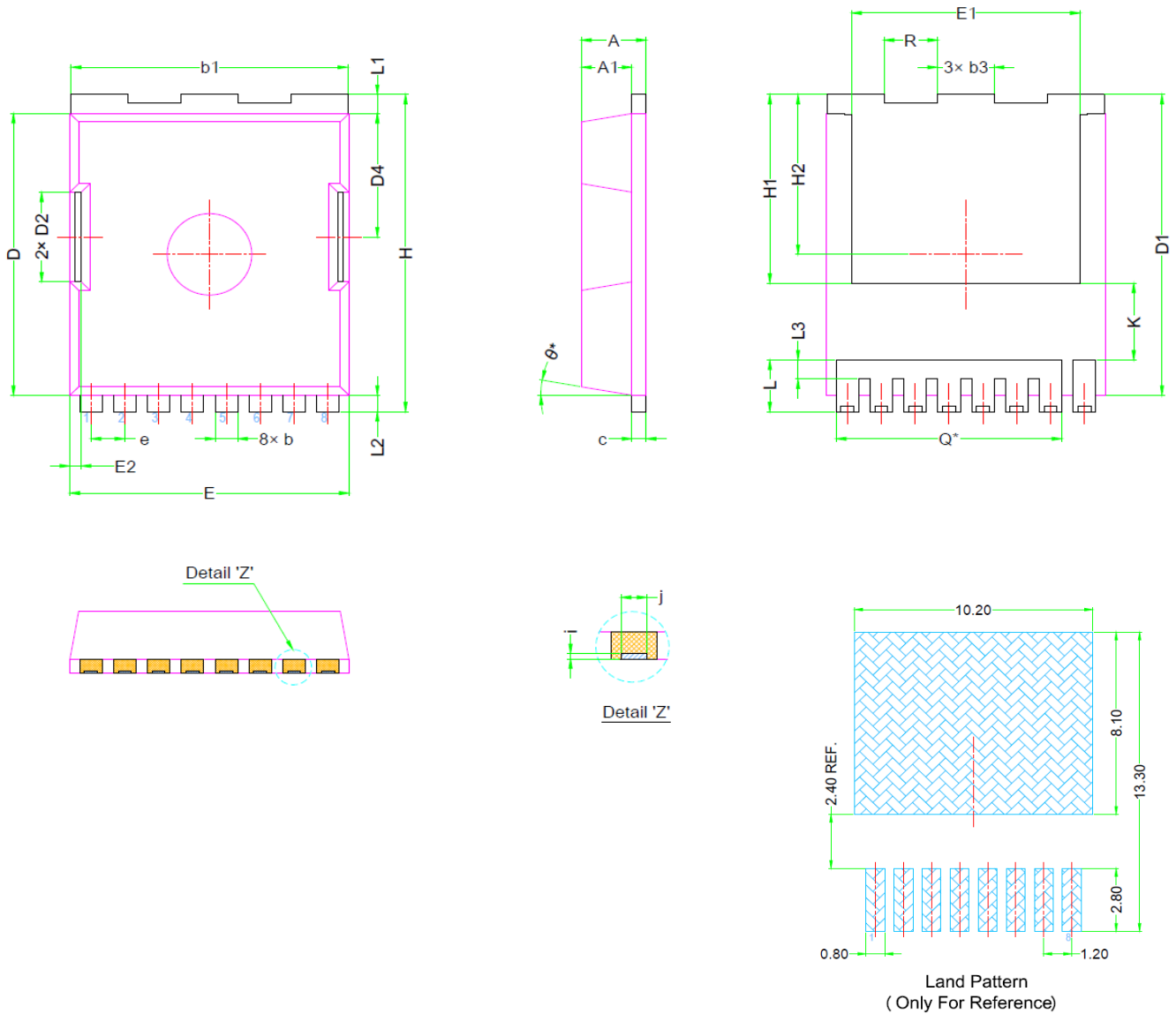


### Typical Characteristics



Package Information

TOLL



SYMBOL	MM			INCH			SYMBOL	MM			INCH		
	MIN	NOM	MAX	MIN	NOM	MAX		MIN	NOM	MAX	MIN	NOM	MAX
A	2.20	2.30	2.40	0.087	0.091	0.094	H	11.58	11.68	11.80	0.456	0.460	0.465
A1	1.70	1.80	1.90	0.067	0.071	0.075	H1	6.95BSC			0.274BSC		
b	0.65	0.80	0.90	0.026	0.031	0.035	H2	5.89BSC			0.232BSC		
b1	9.70	9.80	9.90	0.382	0.386	0.390	i	0.10REF			0.004REF		
b3	1.15	*	2.10	0.05	*	0.08	j	0.46REF			0.018REF		
c	0.40	0.50	0.60	0.016	0.020	0.024	K	3.10REF			0.122REF		
D	10.28	10.38	10.48	0.405	0.409	0.413	L	1.55	*	2.10	0.061	*	0.083
D1	10.98	11.08	11.20	0.432	0.436	0.441	L1	0.60	0.70	0.80	0.024	0.028	0.031
D2	3.20	3.30	3.40	0.126	0.130	0.134	L2	0.50	0.60	0.70	0.020	0.024	0.028
D4	4.45	4.55	4.65	0.175	0.179	0.183	L3	0.40	*	0.80	0.016	*	0.031
E	9.80	9.90	10.00	0.386	0.390	0.394	Q	6.80REF			0.268REF		
E1	8.00	8.10	8.20	0.315	0.319	0.323	R	1.80	*	3.15	0.07	*	0.12
E2	0.30	*	0.80	0.012	*	0.031	$\theta$	10°REF			10°REF		
e	1.20BSC			0.047BSC									

### 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

Kwansemi Semiconductor Co.,Ltd

Email:Sales@kwansemi.com

Web:www.kwansemi.com

### DISCLAIMER:

Kwansemi reserves the right to change the specifications and circuitry without notice at any time. The Products are not designed for use in hostile environments, including, without limitation, aircraft, nuclear power generation, medical appliances, and devices or systems in which malfunction of any Product can reasonably be expected to result in a personal injury. Seller's customers using or selling Seller's products for use in such applications do so at their own risk and agree to fully defend and indemnify Seller.