

Features

- 150V/225A,
 $R_{DS(ON)} = 4.8m\Omega(Typ.)@V_{GS}=10V$
- Excellent $Q_G \times R_{DS(on)}$ product(FOM)
- SGT Technology
- 100% Avalanche Tested
- Good Thermal Performance

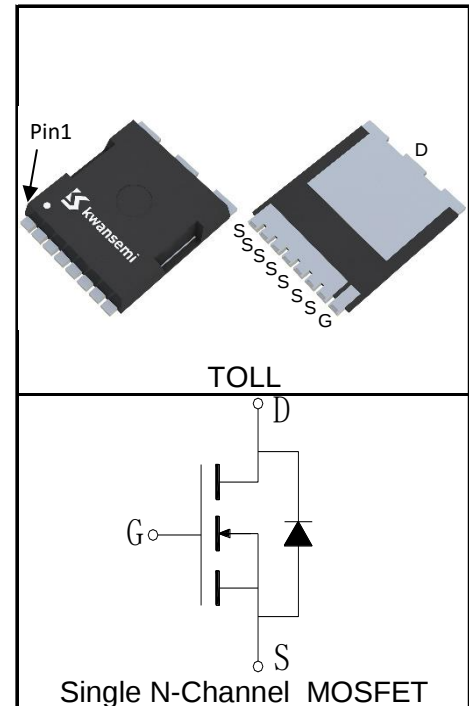
Applications

- Motor Control
- Battery Power Management



Halogen-Free

Pin Description



Absolute Maximum Ratings

Symbol	Parameter		Rating	Unit
Common Ratings (T _C =25°C Unless Otherwise Noted)				
V _{DSS}	Drain-Source Voltage		150	V
V _{GSS}	Gate-Source Voltage		±20	
T _J	Maximum Junction Temperature		175	°C
T _{STG}	Storage Temperature Range		-55 to 175	°C
I _S	Diode Continuous Forward Current	T _C =25°C	225	A
Mounted on Large Heat Sink				
I _{DP} ^①	300μs Pulse Drain Current Tested	T _C =25°C	890	A
I _D ^②	Continuous Drain Current(V _{GS} =10V)	T _C =25°C	225	A
		T _C =100°C	159	
P _D	Maximum Power Dissipation	T _C =25°C	500	W
		T _C =100°C	250	
R _{θJC}	Thermal Resistance-Junction to Case		0.3	°C/W
R _{θJA} ^③	Thermal Resistance-Junction to Ambient		40	°C/W
Drain-Source Avalanche Ratings				
E _{AS} ^④	Avalanche Energy, Single Pulsed		900	mJ

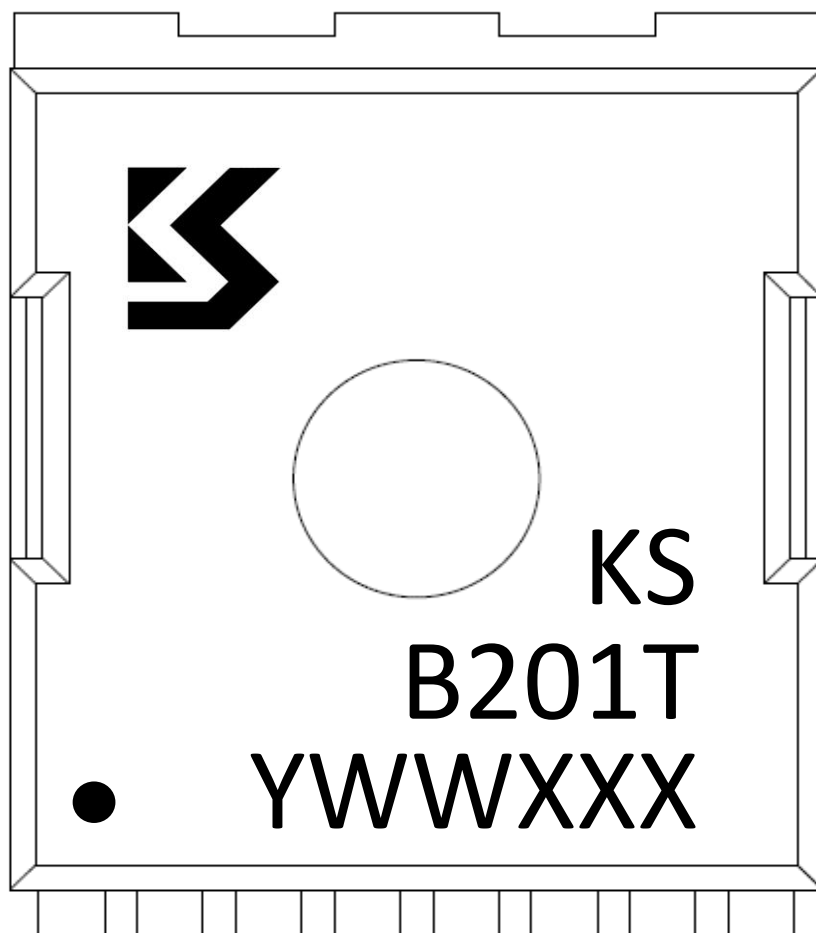
Electrical Characteristics ($T_C=25^{\circ}\text{C}$ Unless Otherwise Noted)

Symbol	Parameter	Test Condition	KSB201LAT			Unit
			Min.	Typ.	Max.	
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _{DS} =250μA	150			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =150V, V _{GS} =0V			1	μA
			T _J =125°C		30	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =250μA	2.5	3.5	4.5	V
I _{GSS}	Gate Leakage Current	V _{GS} =±20V, V _{DS} =0V			±100	nA
R _{DS(ON)} ^⑤	Drain-Source On-state Resistance	V _{GS} =10V, I _{DS} =40A		4.8	6	mΩ
Diode Characteristics						
V _{SD} ^⑤	Diode Forward Voltage	I _{SD} =40A, V _{GS} =0V		0.79	1.2	V
t _{rr}	Reverse Recovery Time	I _{SD} =40A, dI _{SD} /dt=100A/μs		67		ns
Q _{rr}	Reverse Recovery Charge			132		nC
Dynamic Characteristics ^⑥						
R _G	Gate Resistance	V _{GS} =0V, V _{DS} =0V, F=1MHz		1.9		Ω
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =75V, Frequency=1.0MHz		10250		pF
C _{oss}	Output Capacitance			1955		
C _{rss}	Reverse Transfer Capacitance			110		
t _{d(ON)}	Turn-on Delay Time	V _{DD} =75V, I _{DS} =40A, V _{GEN} =10V, R _G =3Ω		29		ns
t _r	Turn-on Rise Time			41		
t _{d(OFF)}	Turn-off Delay Time			105		
t _f	Turn-off Fall Time			48		
Gate Charge Characteristics ^⑥						
Q _g	Total Gate Charge	V _{DS} =75V, V _{GS} =10V, I _{DS} =40A		160		nC
Q _{gs}	Gate-Source Charge			43		
Q _{gd}	Gate-Drain Charge			35		

- 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} , $I_{AS}=60A$, $L=0.5\text{mH}$, $V_{DD}=48V$, $R_G=25\Omega$, 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
KSB201LAT	TOLL	Tape&Reel	2000	13"	24mm



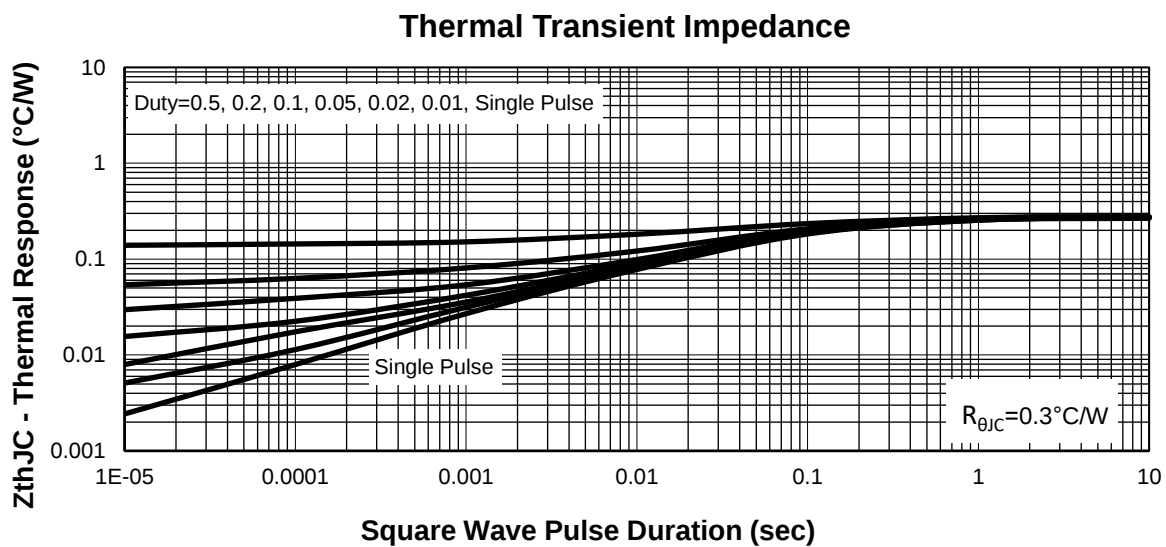
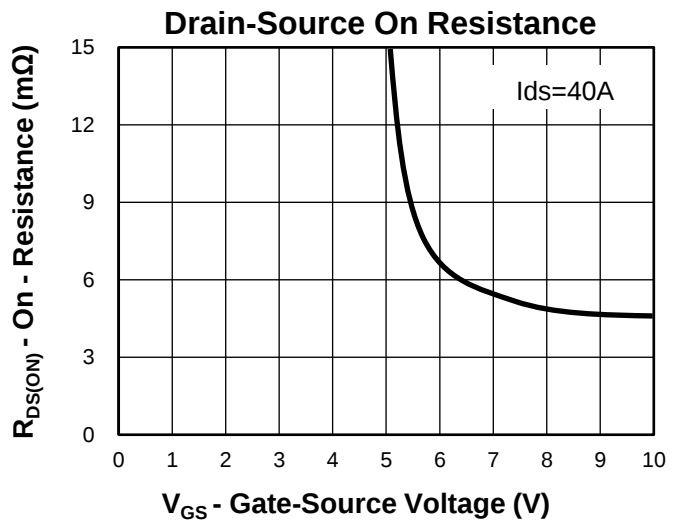
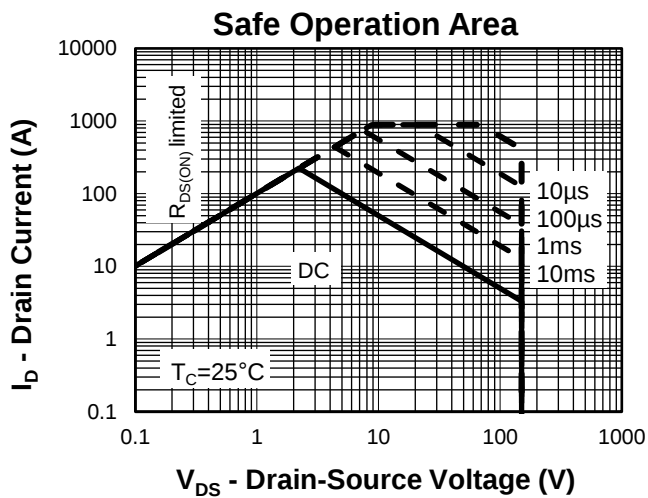
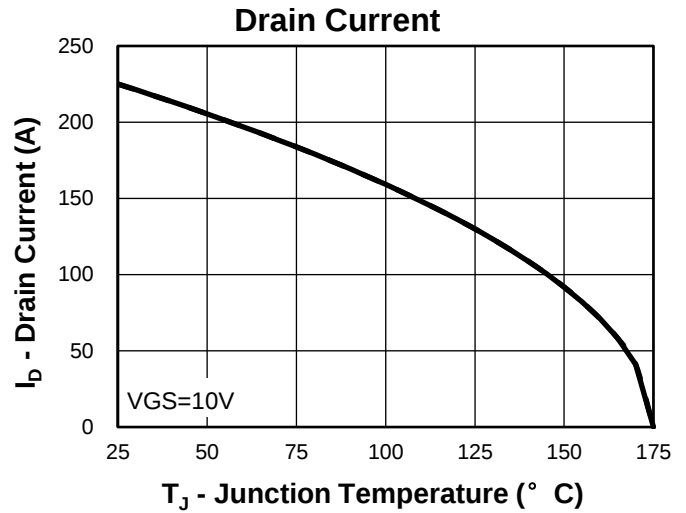
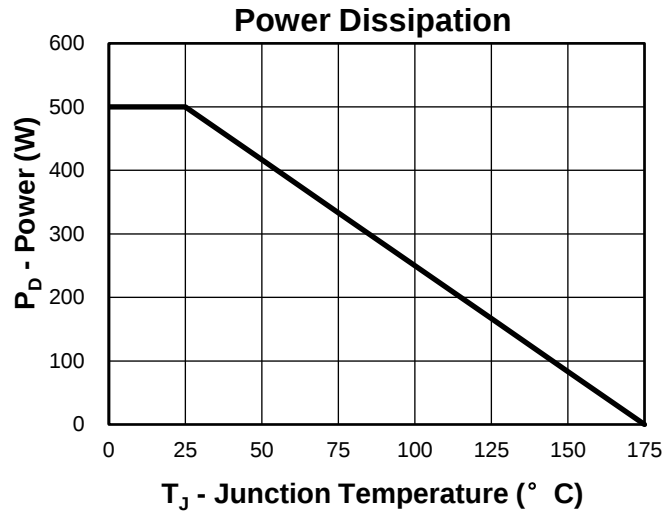
1st Line: Kwansemi LOGO

2nd Line: Kwansemi Code(KS)

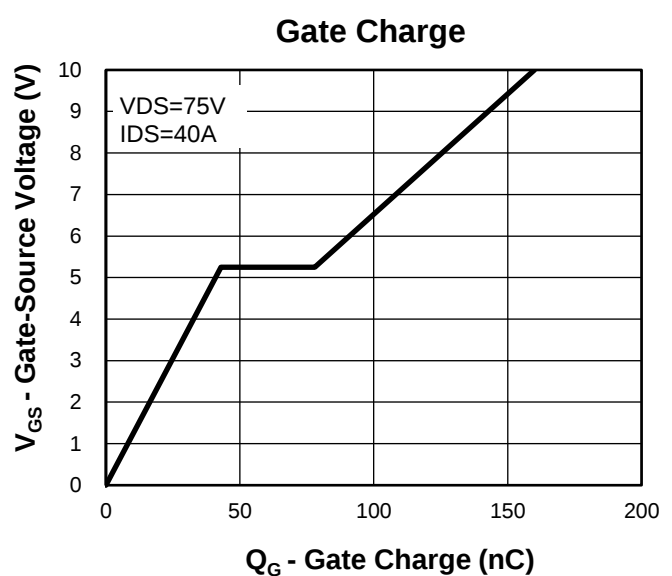
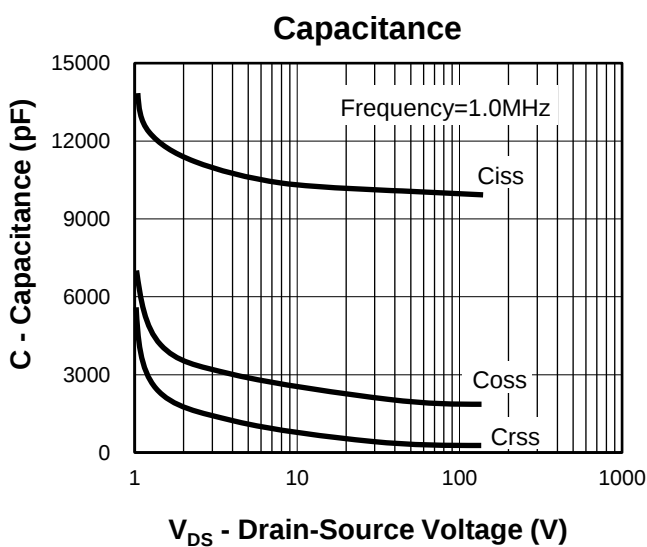
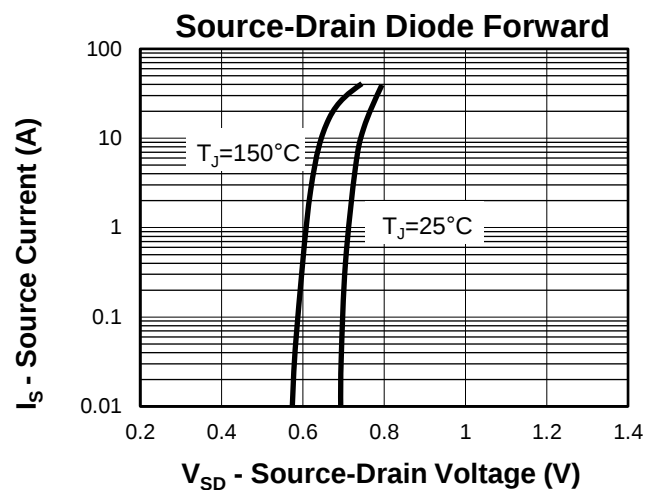
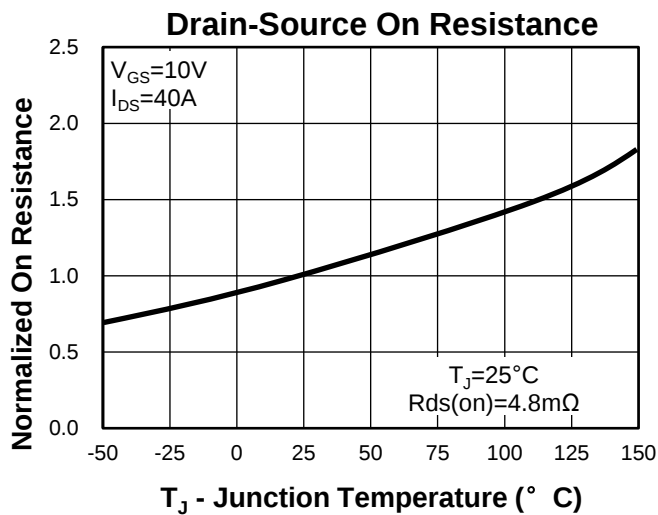
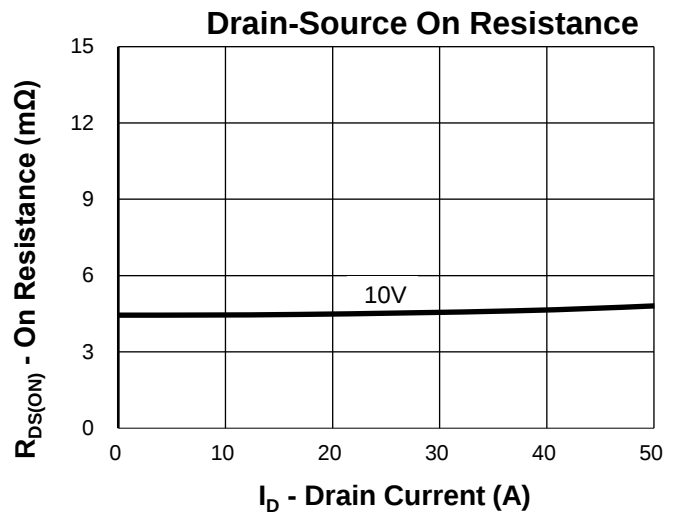
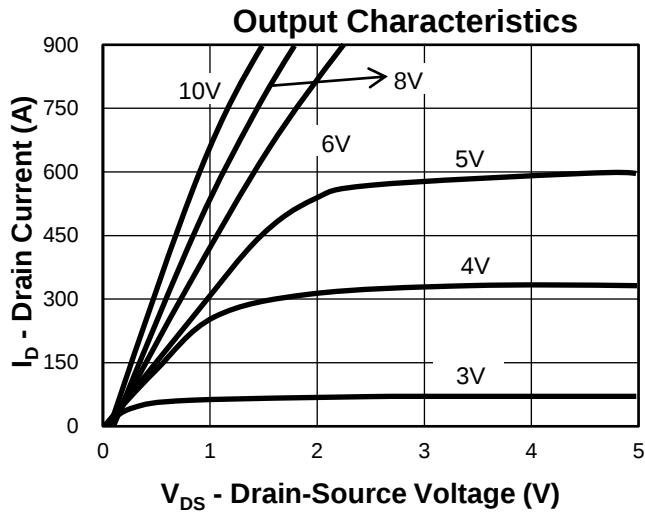
3rd Line: Part Number(B201T)

4th Line: Lot Number(YWWXXX)

Typical Characteristics

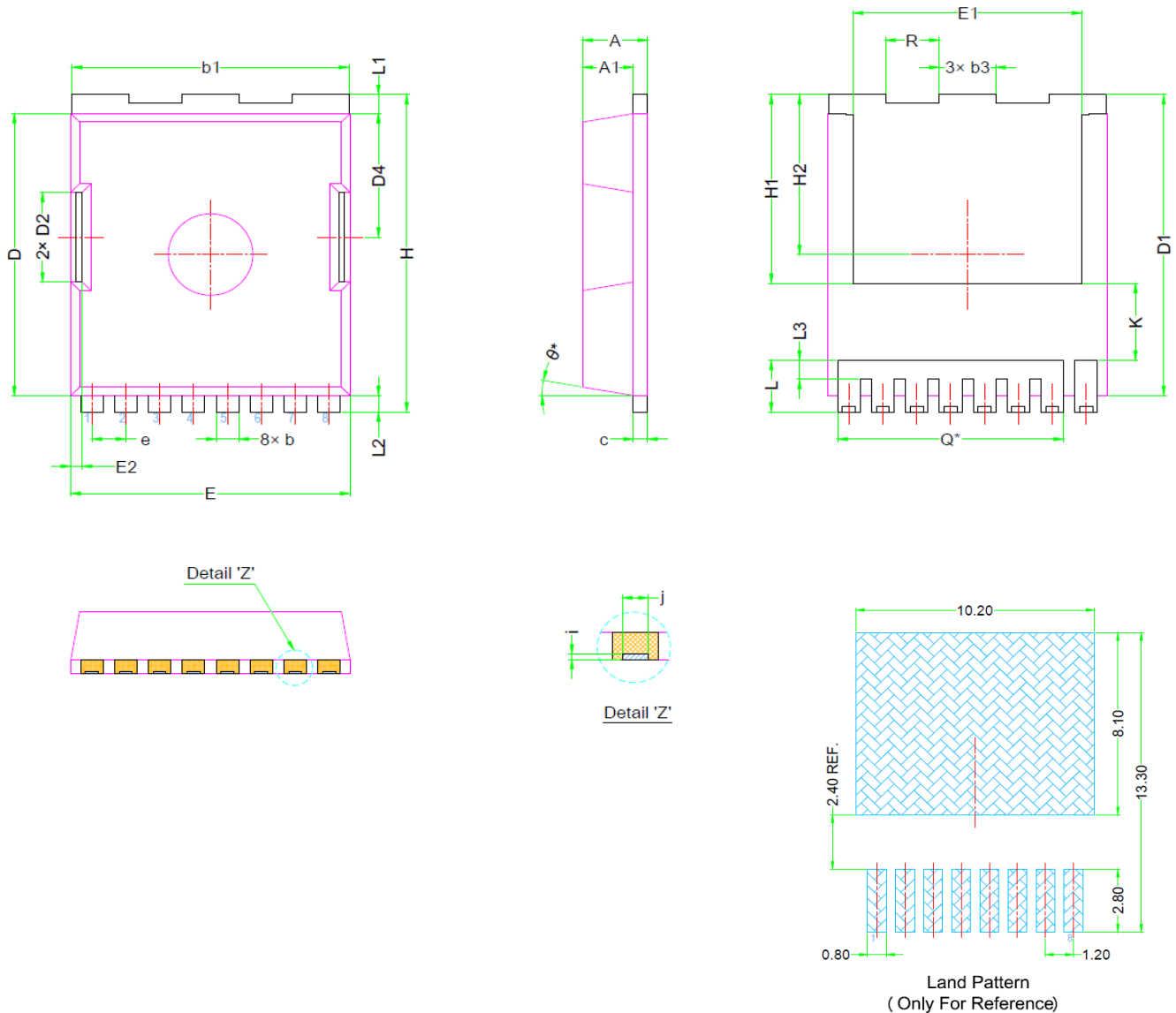


Typical Characteristics



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	θ	10°REF			10°REF		
e	1.20BSC			0.047BSC									

Avalanche Test Circuit and Waveforms



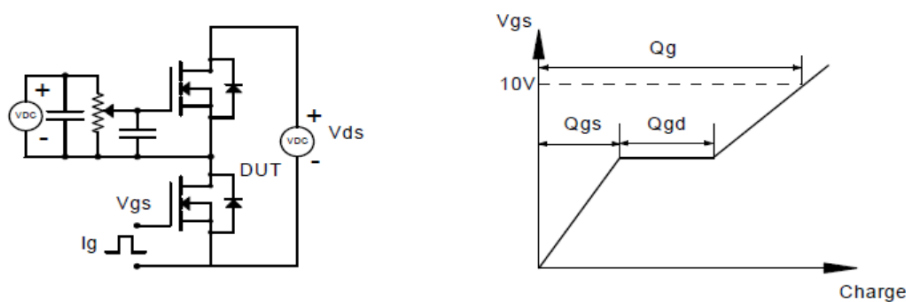
Switching Time Test Circuit and Waveforms



Diode Recovery Test Circuit and Waveforms



Gate Charge Test Circuit and Waveform



Customer Service

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