

## Features

- 100V/4A,  
 $R_{DS(ON)} = 110\text{m}\Omega(\text{Typ.})@V_{GS}=10\text{V}$   
 $R_{DS(ON)} = 140\text{m}\Omega(\text{Typ.})@V_{GS}=4.5\text{V}$
- Excellent  $Q_G \times R_{DS(on)}$  product(FOM)
- SGT Technology
- Low Capacitance to Minimize Driver Losses
- Fast Switching Speed

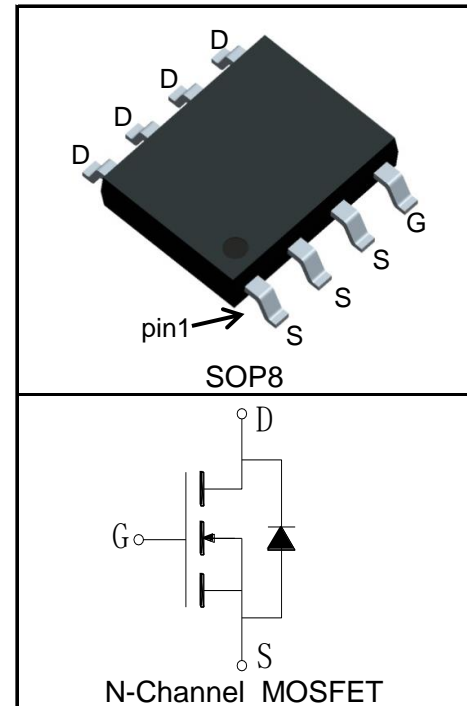
## Applications

- DC/DC Converter
- Load Switch



Halogen-Free

## Pin Description



## Absolute Maximum Ratings

Symbol	Parameter	Rating	Unit
<b>Common Ratings</b> ( $T_A=25^\circ\text{C}$ Unless Otherwise Noted)			
$V_{DSS}$	Drain-Source Voltage	100	V
$V_{GSS}$	Gate-Source Voltage	$\pm 20$	
$T_J$	Maximum Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
$I_S$	Diode Continuous Forward Current	$T_A=25^\circ\text{C}$ 2.7	A
<b>Mounted on Large Heat Sink</b>			
$I_{DP}^{①}$	300 $\mu\text{s}$ Pulse Drain Current Tested	$T_A=25^\circ\text{C}$ 16	A
$I_D^{②}$	Continuous Drain Current( $V_{GS}=10\text{V}$ )	$T_A=25^\circ\text{C}$ 4	A
		$T_A=70^\circ\text{C}$ 3.2	
$P_D$	Maximum Power Dissipation	$T_A=25^\circ\text{C}$ 2.5	W
		$T_A=70^\circ\text{C}$ 1.6	
$R_{\theta JL}$	Thermal Resistance-Junction to Lead	35	$^\circ\text{C}/\text{W}$
$R_{\theta JA}^{③}$	Thermal Resistance-Junction to Ambient	50	$^\circ\text{C}/\text{W}$
<b>Drain-Source Avalanche Ratings</b>			
$E_{AS}^{④}$	Avalanche Energy, Single Pulsed	TBD	mJ

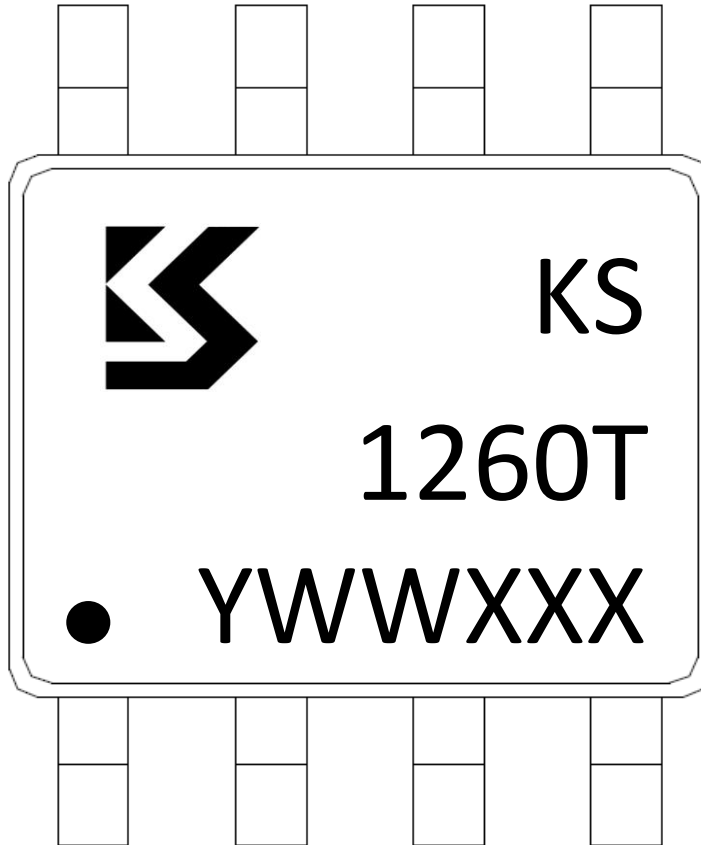
**Electrical Characteristics** ( $T_A=25^\circ\text{C}$  Unless Otherwise Noted)

Symbol	Parameter	Test Condition	KS1260HAT			Unit
			Min.	Typ.	Max.	
<b>Static Characteristics</b>						
$BV_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_{DS}=250\mu A$	100			V
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS}=100V, V_{GS}=0V$			1	$\mu A$
		$T_J=125^\circ C$			30	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_{DS}=250\mu A$	1.2	1.6	2.3	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	$V_{GS}=10V, I_{DS}=3A$		110	140	$m\Omega$
		$V_{GS}=4.5V, I_{DS}=2A$		140	170	$m\Omega$
<b>Diode Characteristics</b>						
$V_{SD}^{(5)}$	Diode Forward Voltage	$I_{SD}=3A, V_{GS}=0V$		0.92	1.2	V
$t_{rr}$	Reverse Recovery Time	$I_{SD}=3A, di_{SD}/dt=100A/\mu s$		12		ns
$Q_{rr}$	Reverse Recovery Charge			20		nC
<b>Dynamic Characteristics<sup>(6)</sup></b>						
$R_G$	Gate Resistance	$V_{GS}=0V, V_{DS}=0V, F=1MHz$		0.9		$\Omega$
$C_{iss}$	Input Capacitance	$V_{GS}=0V,$ $V_{DS}=50V,$ Frequency=1.0MHz		310		pF
$C_{oss}$	Output Capacitance			60		
$C_{rss}$	Reverse Transfer Capacitance			15		
$t_{d(ON)}$	Turn-on Delay Time	$V_{DD}=50V, I_{DS}=3A,$ $V_{GEN}=10V, R_G=6\Omega$		7		ns
$t_r$	Turn-on Rise Time			11		
$t_{d(OFF)}$	Turn-off Delay Time			18		
$t_f$	Turn-off Fall Time			9		
<b>Gate Charge Characteristics<sup>(6)</sup></b>						
$Q_g$	Total Gate Charge	$V_{DS}=50V, V_{GS}=10V,$ $I_{DS}=3A$		7		nC
$Q_{gs}$	Gate-Source Charge			1.3		
$Q_{gd}$	Gate-Drain Charge			1.4		

- 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  $T_J = 25^\circ\text{C}$ .
  - 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
KS1260HAT	SOP8	Tape&Reel	3000	13"	12mm

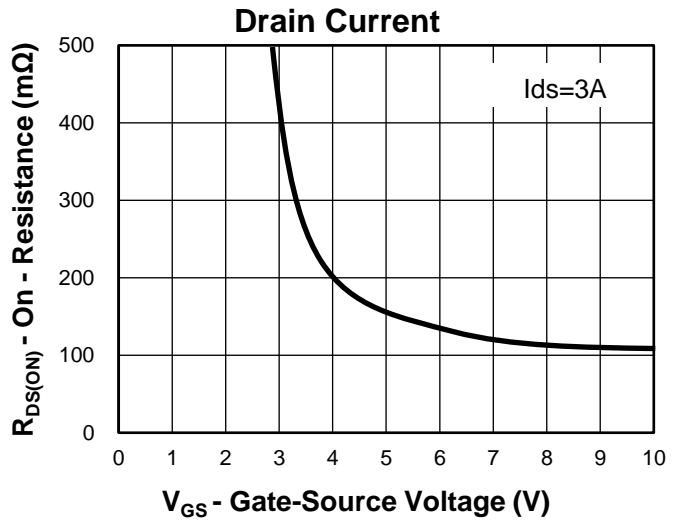
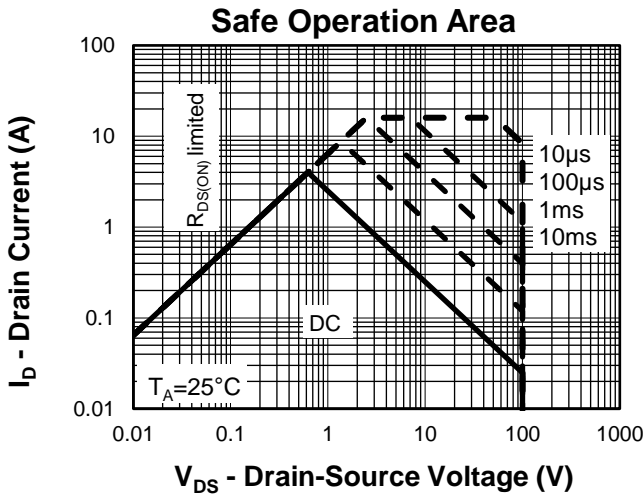
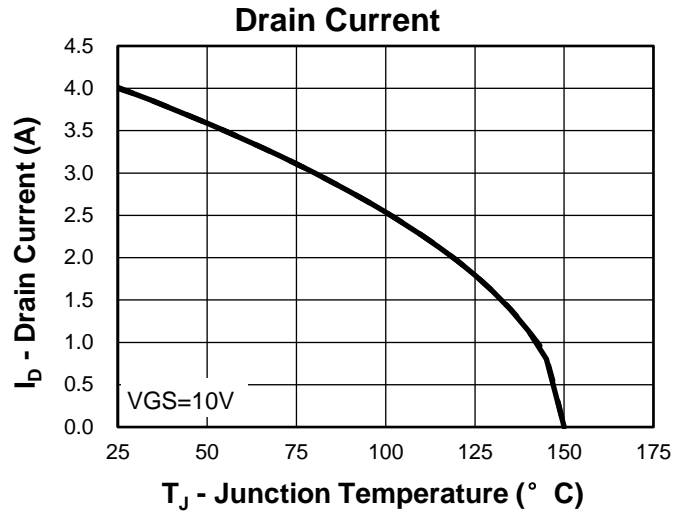
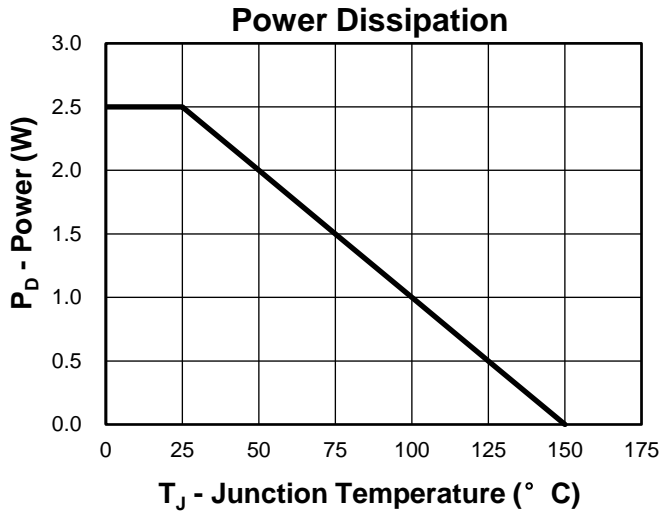


1st Line: Kwansemi LOGO, Kwansemi Code(KS)

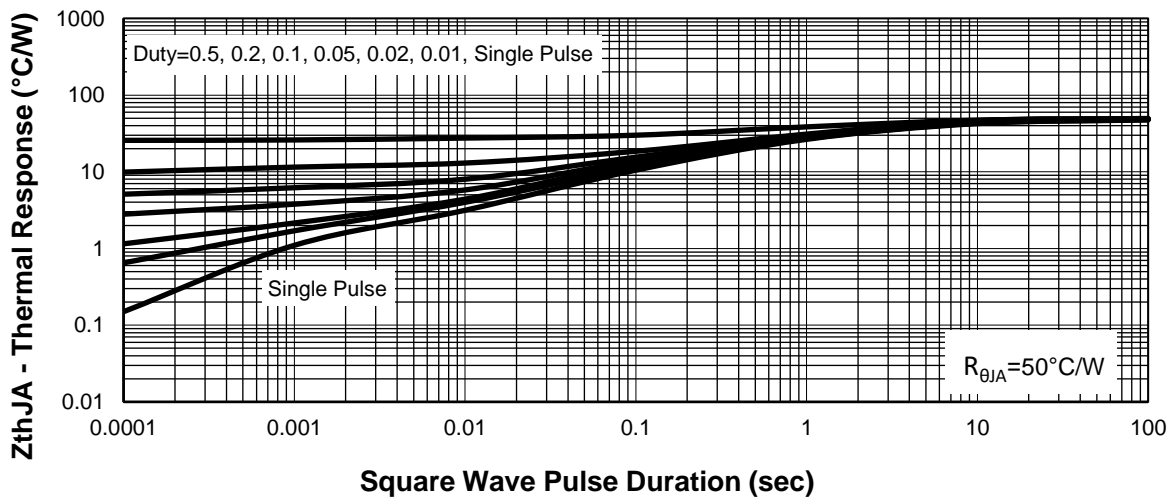
2nd Line: Part Number(1260T)

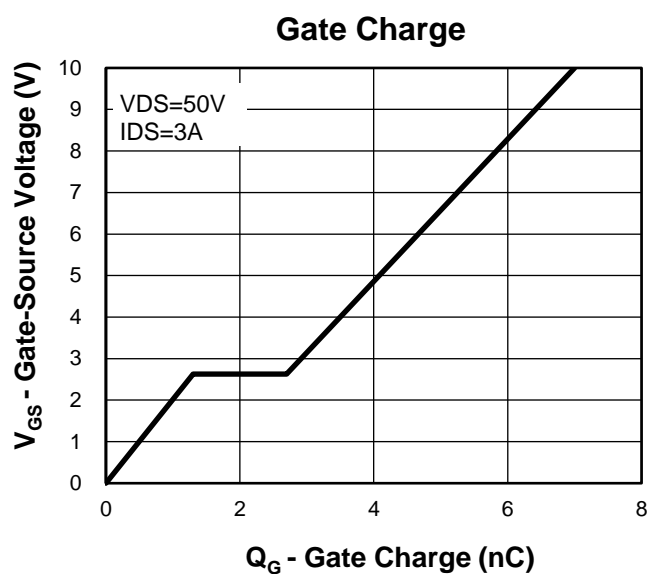
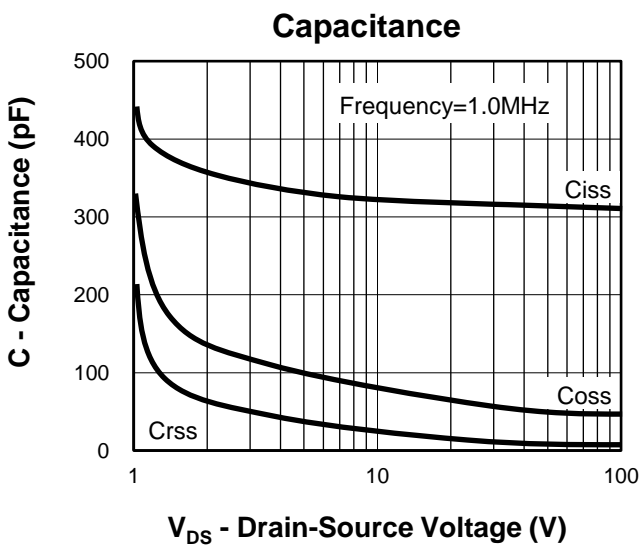
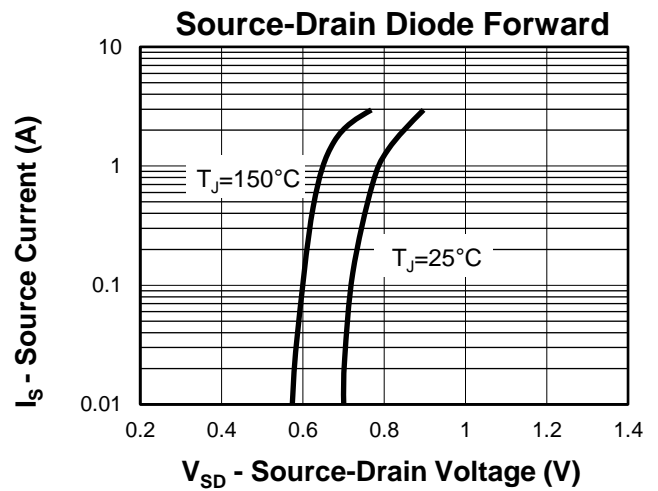
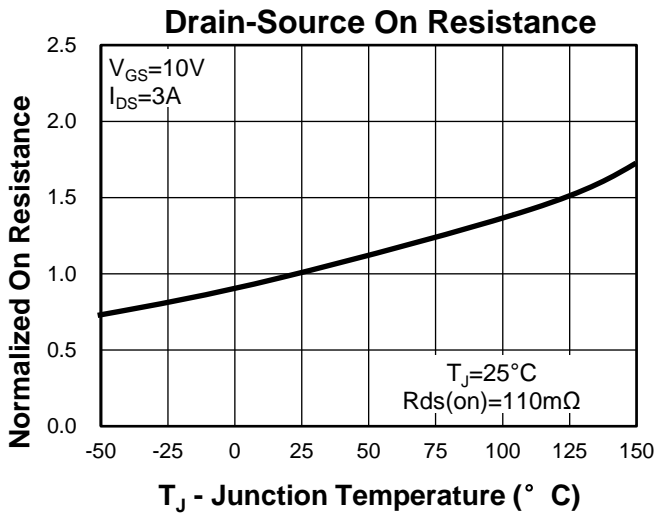
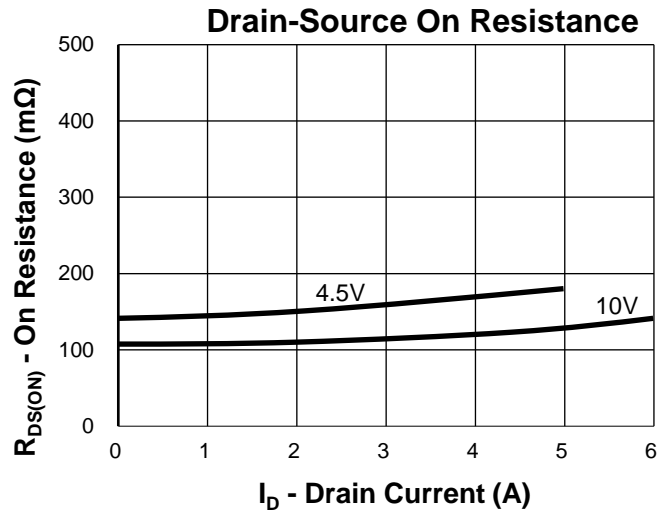
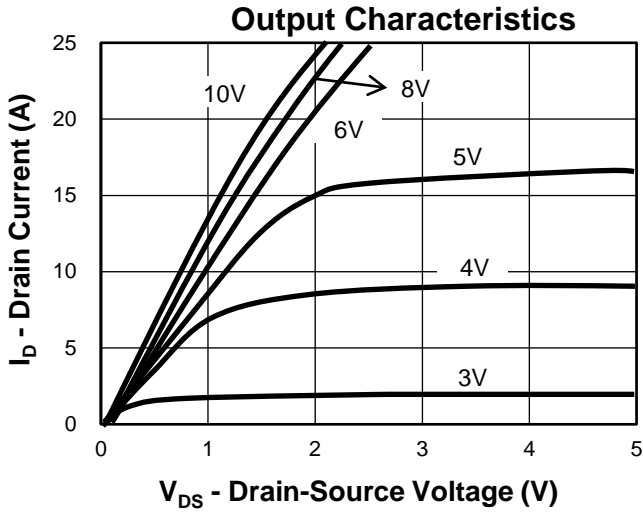
3rd Line: Lot Number(YWWXXX)

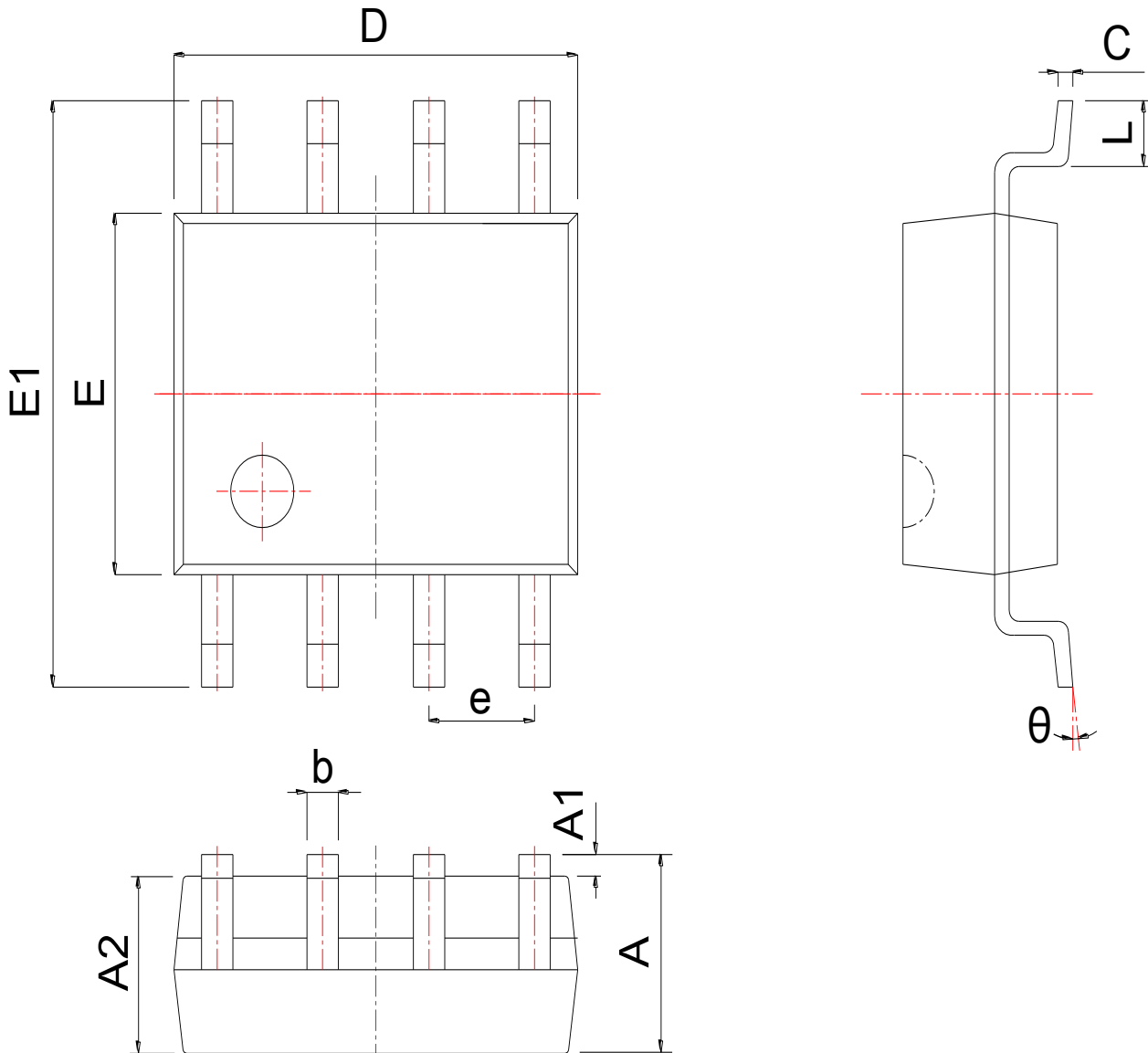
### Typical Characteristics



### Thermal Transient Impedance



**Typical Characteristics**


**Package Information**
**SOP8**


SYMBOL	MM			INCH		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.300	1.525	1.750	0.051	0.060	0.069
A1	0.050	0.150	0.250	0.002	0.006	0.010
A2	1.350	1.450	1.550	0.053	0.057	0.061
b	0.330	0.420	0.510	0.013	0.017	0.020
c	0.170	0.210	0.250	0.007	0.008	0.010
D	4.700	4.900	5.100	0.185	0.193	0.201
E	3.800	3.900	4.000	0.150	0.154	0.157
E1	5.800	6.000	6.200	0.228	0.236	0.244
e	1.270 BSC			0.050 BSC		
L	0.400	0.835	1.270	0.016	0.033	0.050
θ	0°		8°	0°		8°

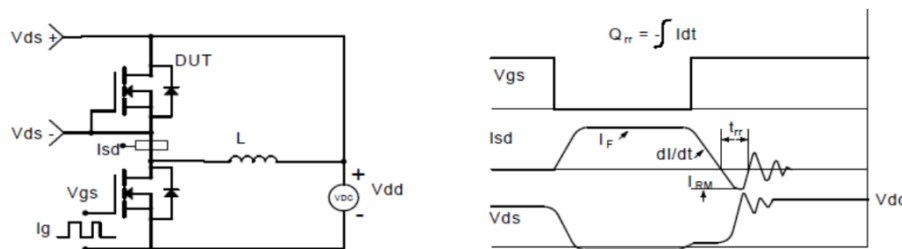
### Avalanche Test Circuit and Waveforms



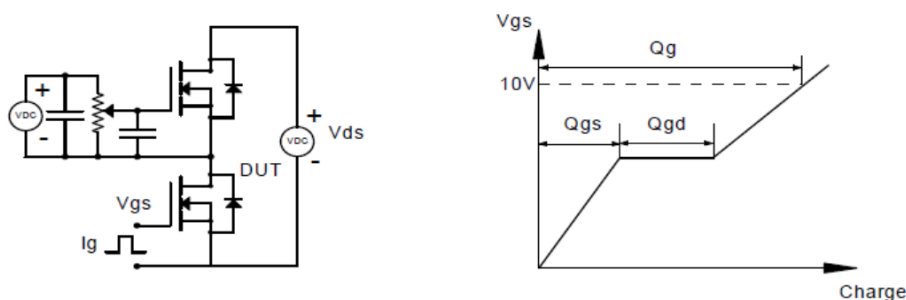
### Switching Time Test Circuit and Waveforms



### Diode Recovery Test Circuit and Waveforms



### Gate Charge Test Circuit and Waveform



### Customer Service

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