



$R_{DS(on),typ}$	$V_{GS}=4.5V$	5.8	m
$I_D$		17	A

	Symbol		Unit
			A
Drain to Source Voltage	-	60	V
Gate to Source Voltage	$V_{GS}$	20	V
	-		A
	$L=0.4mH, T_C$	80	mJ
			W
		-55 to 1	s

Unit

75

**Electrical Characteristics at T<sub>j</sub>**
**Static Characteristics**

Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\text{ A}$	60	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=250\text{ A}$	1.0	1.6	2.4	
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{GS}=0V, V_{DS}=60V, T_j$	-	-	1	A
		$V_{GS}=0V, V_{DS}=60V, T_j$	-	-	100	
Gate to Source Leakage Current	$I_{GSS}$	$V_{GS} \quad V_{DS}=0V$	-	-	100	nA
Drain to Source on Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=17A$	-	4.5	6	m
		$V_{GS}=4.5V, I_D=15A$	-	5.8	8	
Transconductance	$g_{fs}$	$V_{DS}=5V, I_D=17A$	-	45	-	S
Gate Resistance	$R_G$	$V_{GS}=0V, V_{DS}\text{ Open}, f=1\text{MHz}$	-	1.5	-	

**Dynamic Characteristics**

Input Capacitance	$C_{iss}$	$V_{GS}=0V, V_{DS}=30V, f=1\text{MHz}$	-	2274	-	pF
Output Capacitance	$C_{oss}$		-	793	-	
Reverse Transfer Capacitance	$C_{rss}$		-	35	-	
Total Gate Charge	$Q_g(10V)$	$V_{DD}=30V, I_D=17A, V_{GS}=10V$	-	36	-	nC
Total Gate Charge	$Q_g(4.5V)$		-	18	-	
Gate to Source Charge	$Q_{gs}$		-	5	-	
Gate to Drain (Miller) Charge	$Q_{gd}$		-	8	-	
Turn on Delay Time	$t_{d(on)}$	$V_{DD}=30V, I_D=17A, V_{GS}=10V, R_G=10\text{ }\Omega$	-	11	-	ns
Rise time	$t_r$		-	7	-	
Turn off Delay Time	$t_{d(off)}$		-	35	-	
Fall Time	$t_f$		-	10	-	

**Reverse Diode Characteristics**

Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_F=17A$	-	0.9	1.2	V
Reverse Recovery Time	$t_{rr}$	$V_R=30V, I_F=17A, di_F/dt=300A/\text{s}$	-	30	-	ns
Reverse Recovery Charge	$Q_{rr}$		-	53	-	nC

Fig 1. Typical Output Characteristics

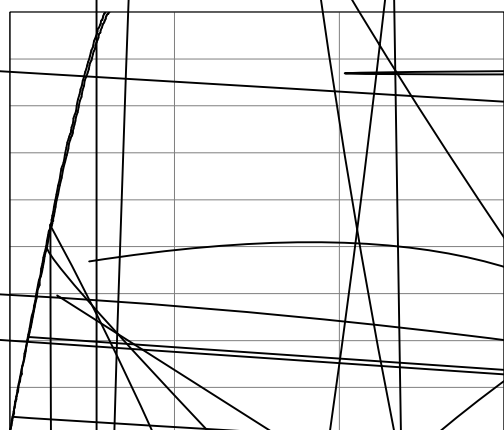


Figure 2. On-Resistance vs. Gate-Source Voltage

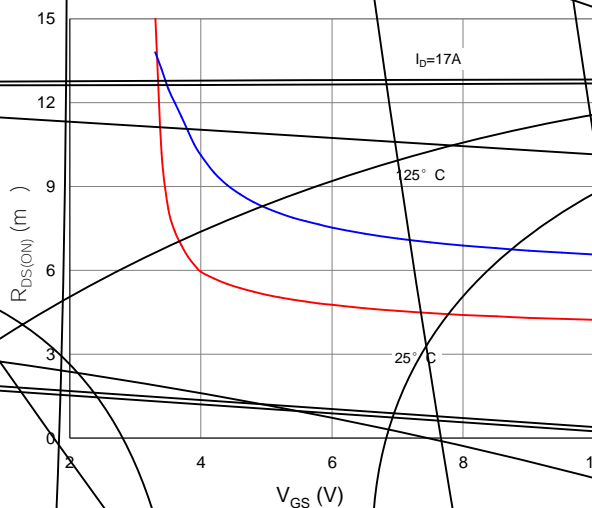


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

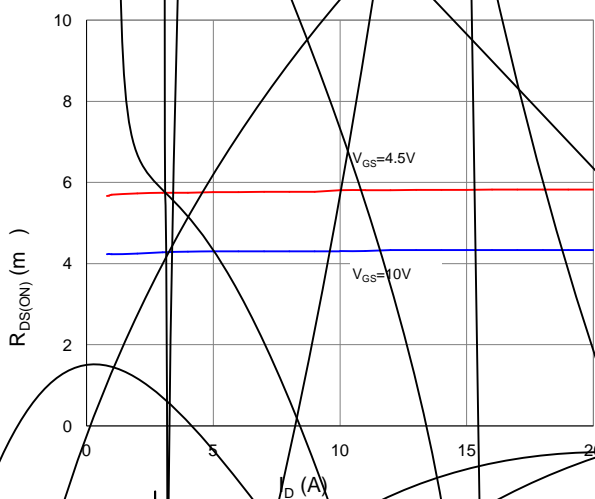


Figure 4. Normalized On-Resistance vs. Junction Temperature

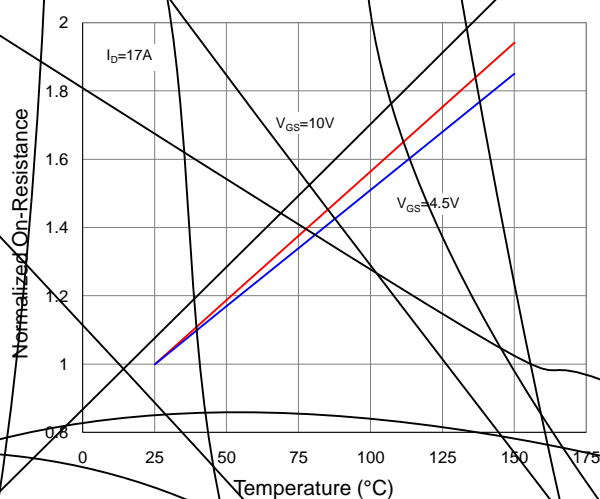


Figure 5. Typical Transfer Characteristics

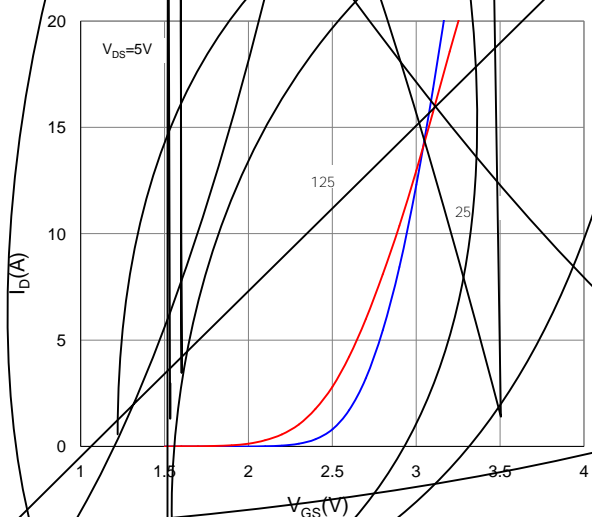


Figure 6. Typical Source-Drain Diode Forward Voltage

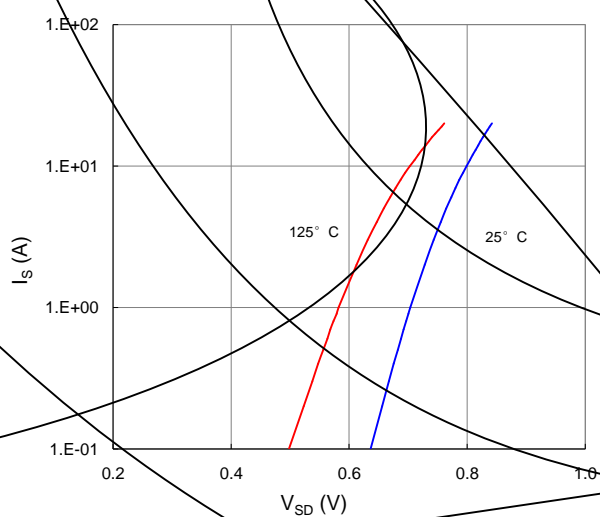


Figure 7. Typical Gate-Charge vs. Gate-to-Source Voltage

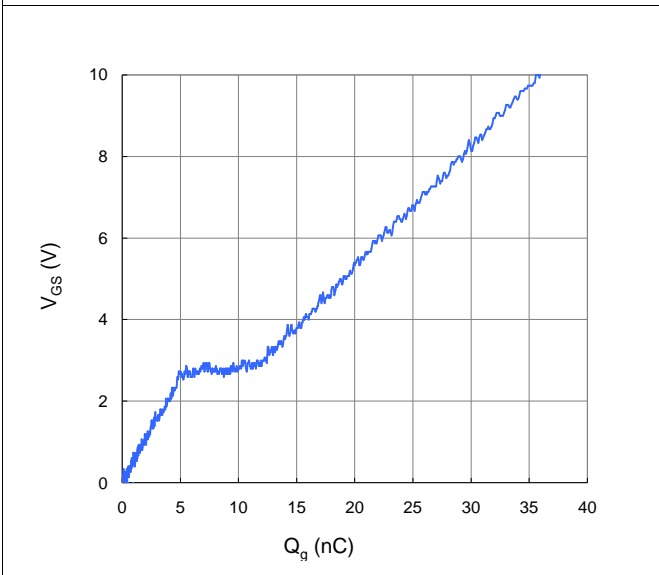


Figure 8. Typical Capacitance vs. Drain-to-Source Voltage

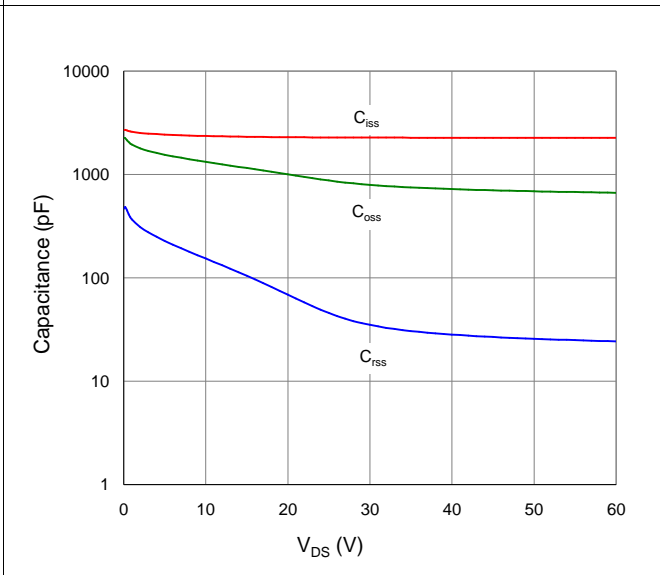


Figure 9. Maximum Safe Operating Area

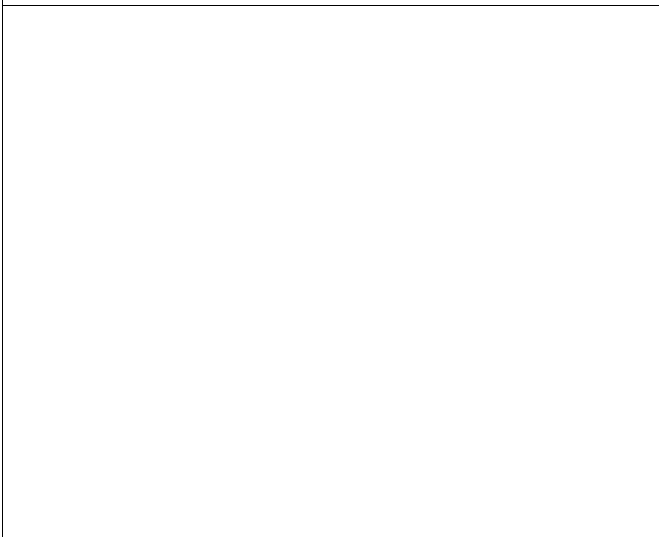


Figure 10. Maximum Drain Current vs. Case Temperature

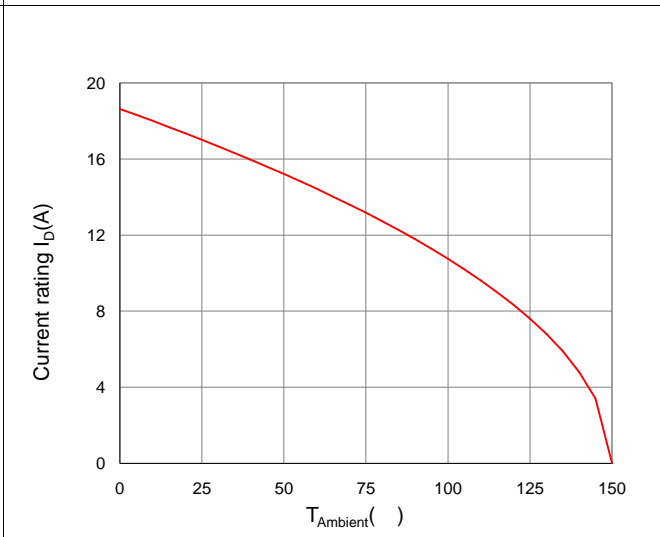
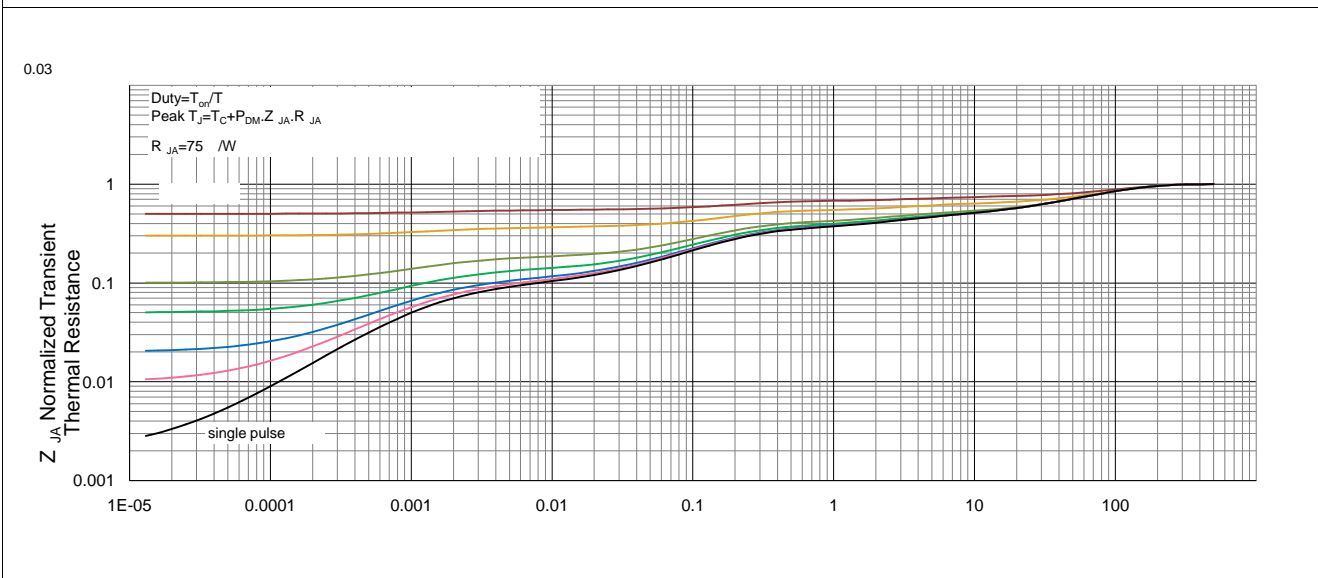
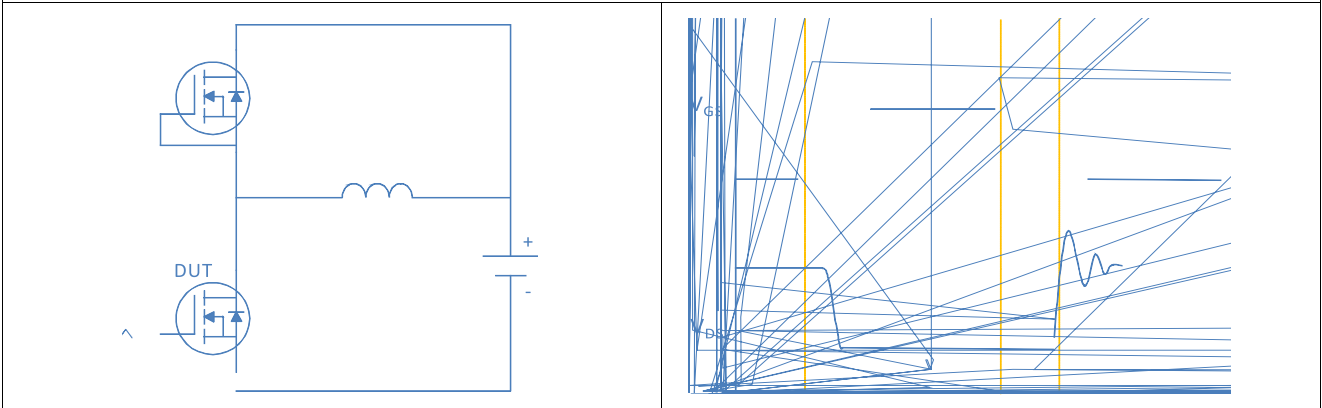


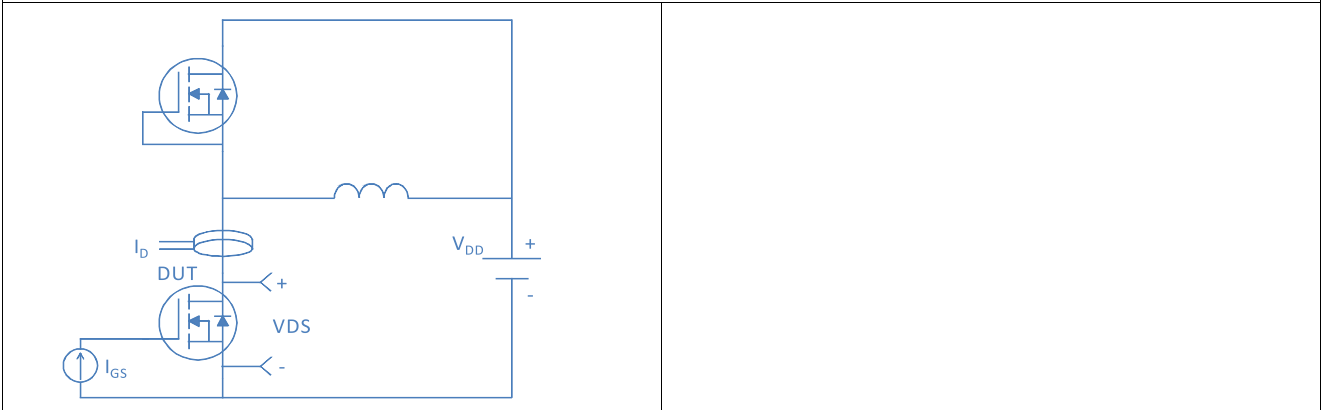
Figure 11. Normalized Maximum Transient Thermal Impedance, Junction-to-Ambient



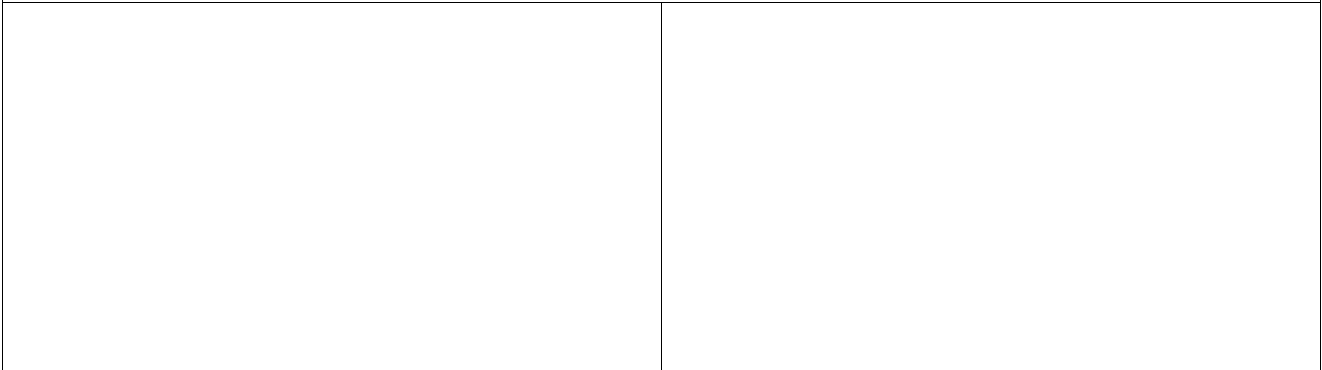
Inductive switching Test



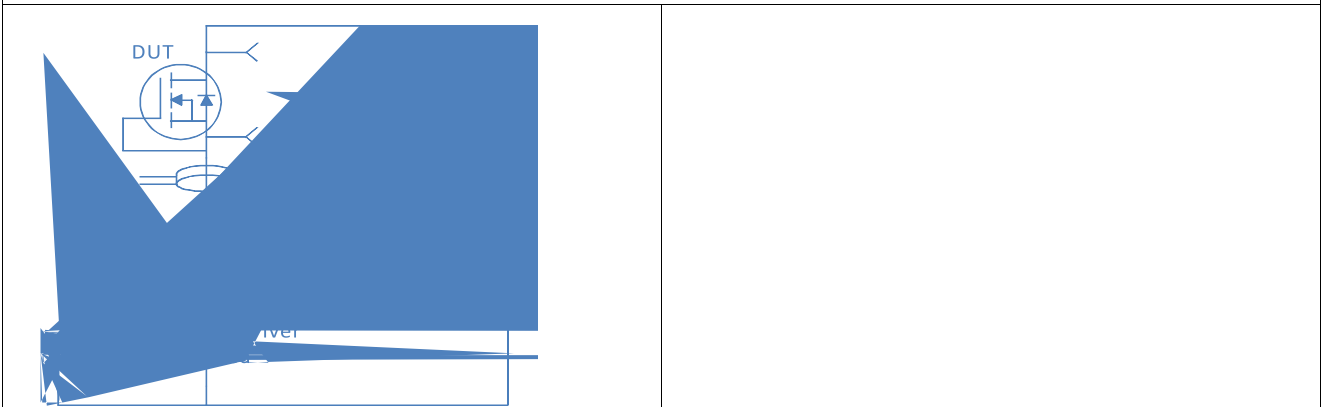
Gate Charge Test



Uclamped Inductive Switching (UIS) Test

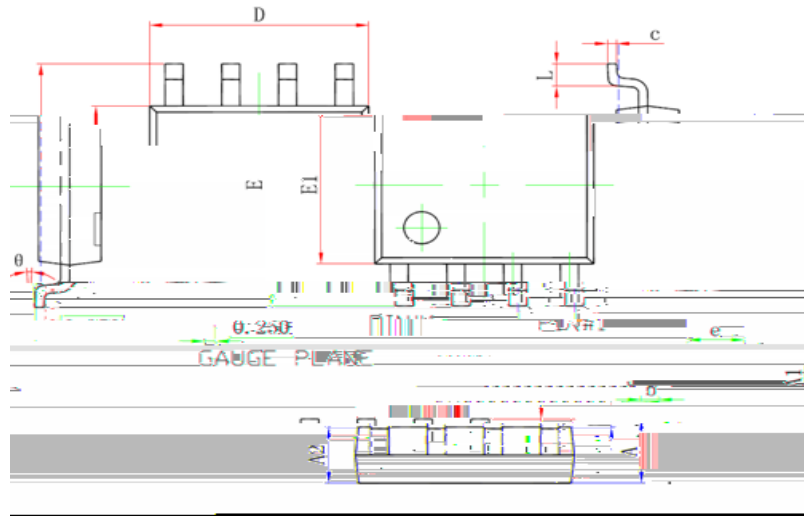


Diode Recovery Test



Package Outline

SOIC-8, 8 leads



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.250	1.650	0.049	0.065
b	0.310	0.510	0.012	0.020
c	0.170	0.250	0.007	0.010
D	4.800	5.000	0.189	0.197
e	1.270 (BSC)		0.050 (SBC)	
E	5.800	6.200	0.228	0.244
E1	3.800	4.000	0.150	0.157
L	0.400	1.270	0.016	0.031
θ	0°	8°	0°	8°