Electrical Characteristics $T_C = 25^oC$ unless otherwise noted

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Off Characteristics						
BV_{DSS}	Drain to Source Breakdown Voltage	V_{GS} = 0 V, I_D = 250 μA	600	-	-	V
ΔBV_{DSS} / ΔT_J	Breakdown Voltage Temperature Coefficient	I_D = 250 μA, Referenced to 25°C	-	0.65	-	V/°C
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 600 V, V_{GS} = 0 V	-	-	10	μA
		V_{DS} = 480 V, T_C = 125°C	-	-	100	μA
I_{GSSF}	Gate-Body Leakage Current, Forward	V_{GS} = 30 V, V_{DS} = 0 V			100	nA
I_{GSSR}	Gate-Body Leakage Current, Reverse	V_{GS} = -30 V, V_{DS} = 0 V	-	-	-100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = 250 μA	2.0	-	4.0	V
$R_{DS(on)}$	Static Drain to Source On Resistance	V_{GS} = 10 V, I_D = 0.45 A	-	9.7	12	Ω
g_{FS}	Forward Transconductance	V_{DS} = 40 V, I_D = 0.45 A (Note4)	-	0.92	-	S
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS} = 25 V, V_{GS} = 0 V, f = 1.0 MHz	-	165	215	pF
C_{oss}	Output Capacitance		-	18	25	pF
C_{rss}	Reverse Transfer Capacitance		-	3.6	4.7	pF
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{DD} = 300 V, I_D = 1.0 A, R_G = 25 Ω	-	14	40	ns
t_r	Turn-On Rise Time		-	45	100	ns
$t_{d(off)}$	Turn-Off Delay Time		-	25	60	ns
t_f	Turn-Off Fall Time	(Note 4,5)	-	35	80	ns
Q_g	Total Gate Charge	V_{DS} = 480 V, I_D = 1.0 A, V_{GS} = 10 V	-	5.9	7.7	nC
Q_{gs}	Gate-Source Charge		-	1.0	-	nC
Q_{gd}	Gate-Drain Charge	(Note 4,5)	-	2.7	-	nC
Drain-Source Diode Characteristics						
I_S	Maximum Continuous Drain to Source Diode Forward Current		-	-	0.9	A
I_{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	3.0	A
V_{SD}	Drain to Source Diode Forward Voltage	V_{GS} = 0 V, I_S = 0.9 A	-	-	1.4	V
t_{rr}	Reverse Recovery Time	V_{GS} = 0 V, I_S = 1.0 A, dI_F / dt = 100 A/μs (Note 4)	-	180	-	ns
Q_{rr}	Reverse Recovery Charge		-	0.47	-	μC

Notes:
1. Repetitive Rating : Pulse width limited by maximum junction temperature
2. L = 115mH, I_{AS} = 0.9A, V_{DD} = 50V, R_G = 25 Ω, Starting T_J = 25°C
3. $I_{SD} \leq$ 1.0A, di/dt $\leq$ 300A/μs, $V_{DD} \leq BV_{DSS}$, Starting T_J = 25°C
4. Pulse Test : Pulse width $\leq$ 300μs, Duty cycle $\leq$ 2%
5. Essentially independent of operating temperature

Typical Characteristics

Figure 1. On-Region Characteristics

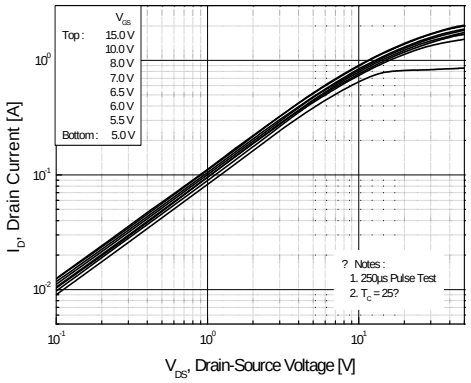


Figure 2. Transfer Characteristics

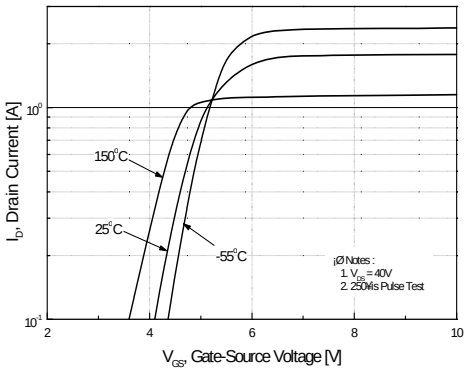


Figure 3. On-Resistance Variation vs. Drain Current and Gate Voltage

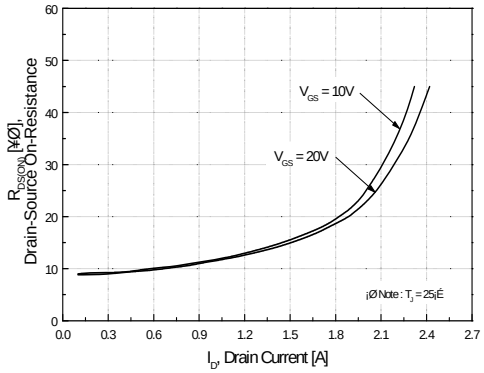


Figure 4. Body Diode Forward Voltage Variation vs. Source Current and Temperature

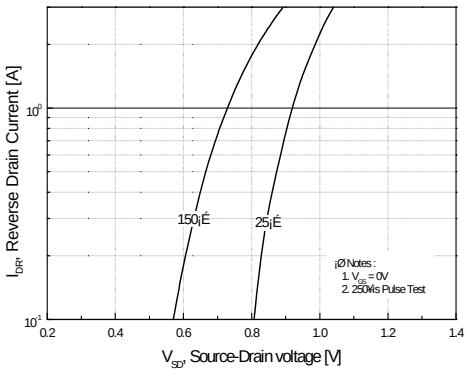


Figure 5. Capacitance Characteristics

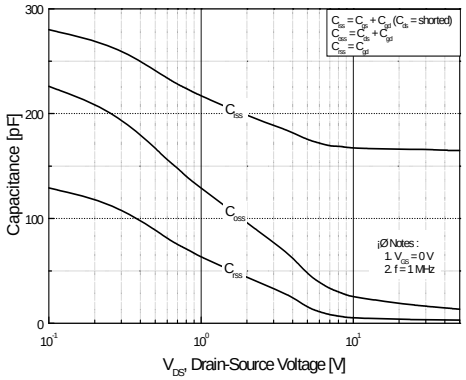
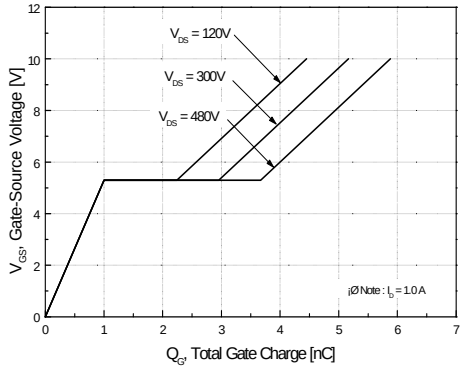


Figure 6. Gate Charge Characteristics



Typical Characteristics (Continued)

Figure 7. Breakdown Voltage Variation vs. Temperature

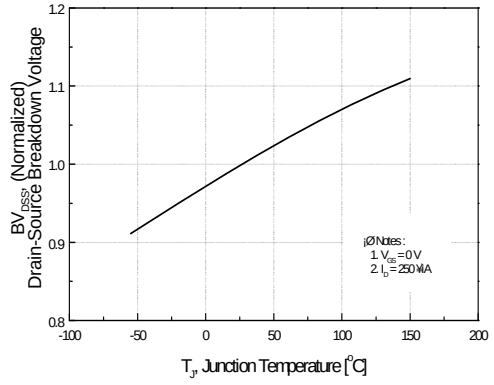


Figure 8. On-Resistance Variation vs. Temperature

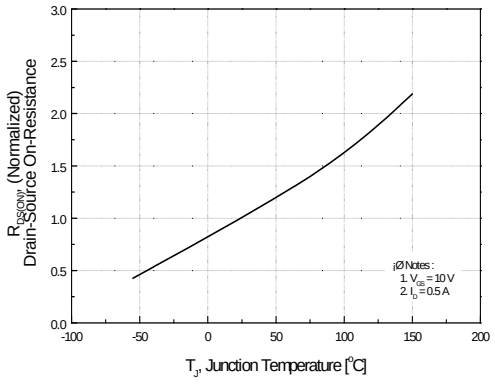


Figure 9. Maximum Safe Operating Area

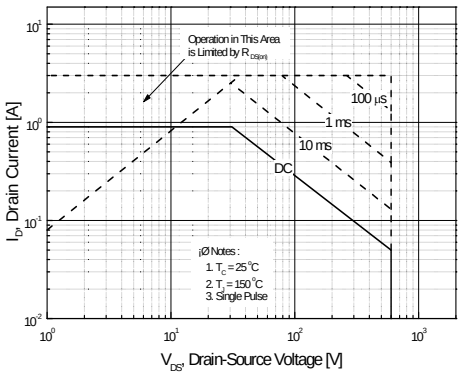


Figure 10.Maximum Safe Operating Area vs. Case Temperature

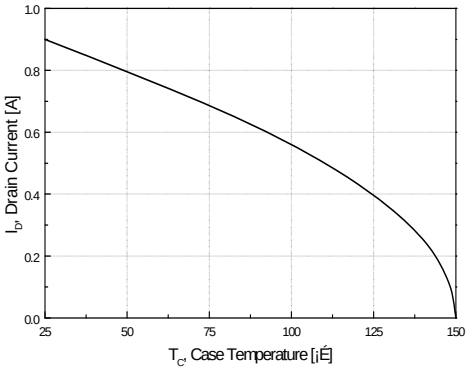


Figure 11. Transient Thermal Response Curve

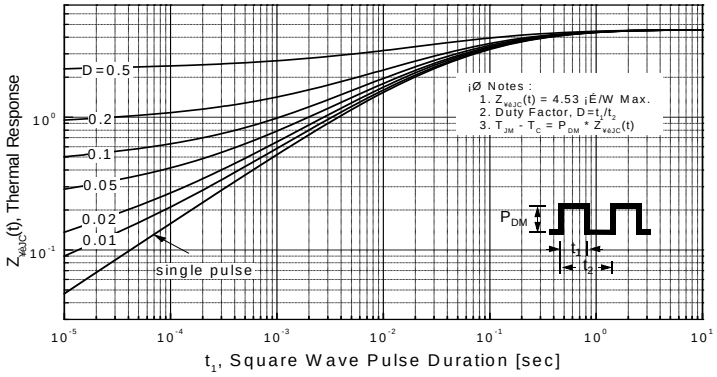


Figure 12. Gate Charge Test Circuit & Waveform

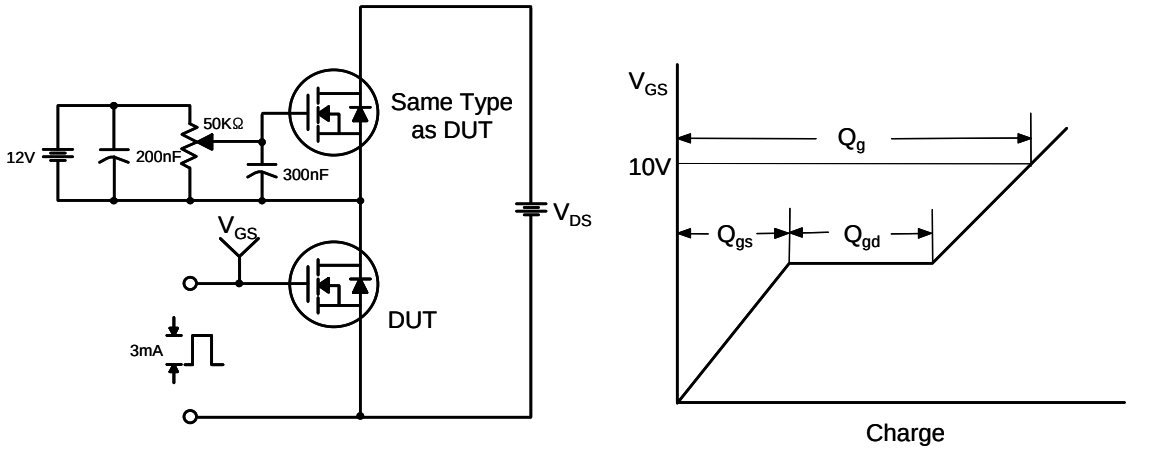


Figure 13. Resistive Switching Test Circuit & Waveforms

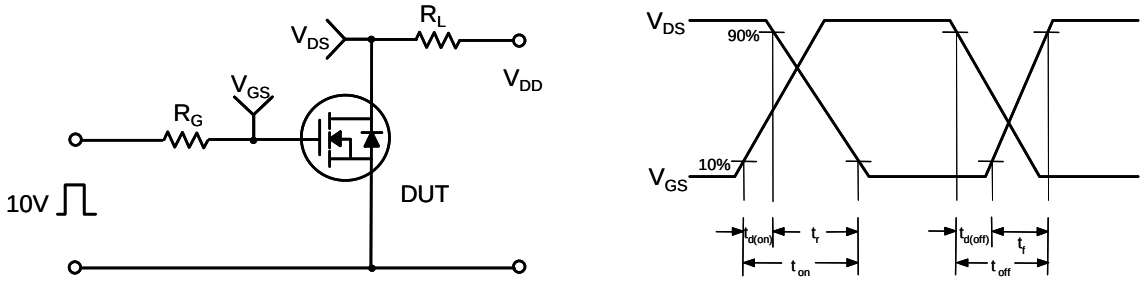


Figure 14. Unclamped Inductive Switching Test Circuit & Waveforms

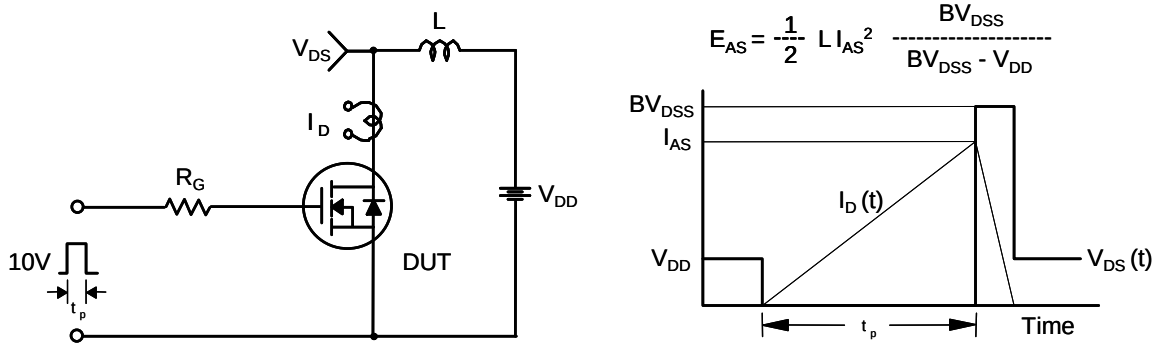
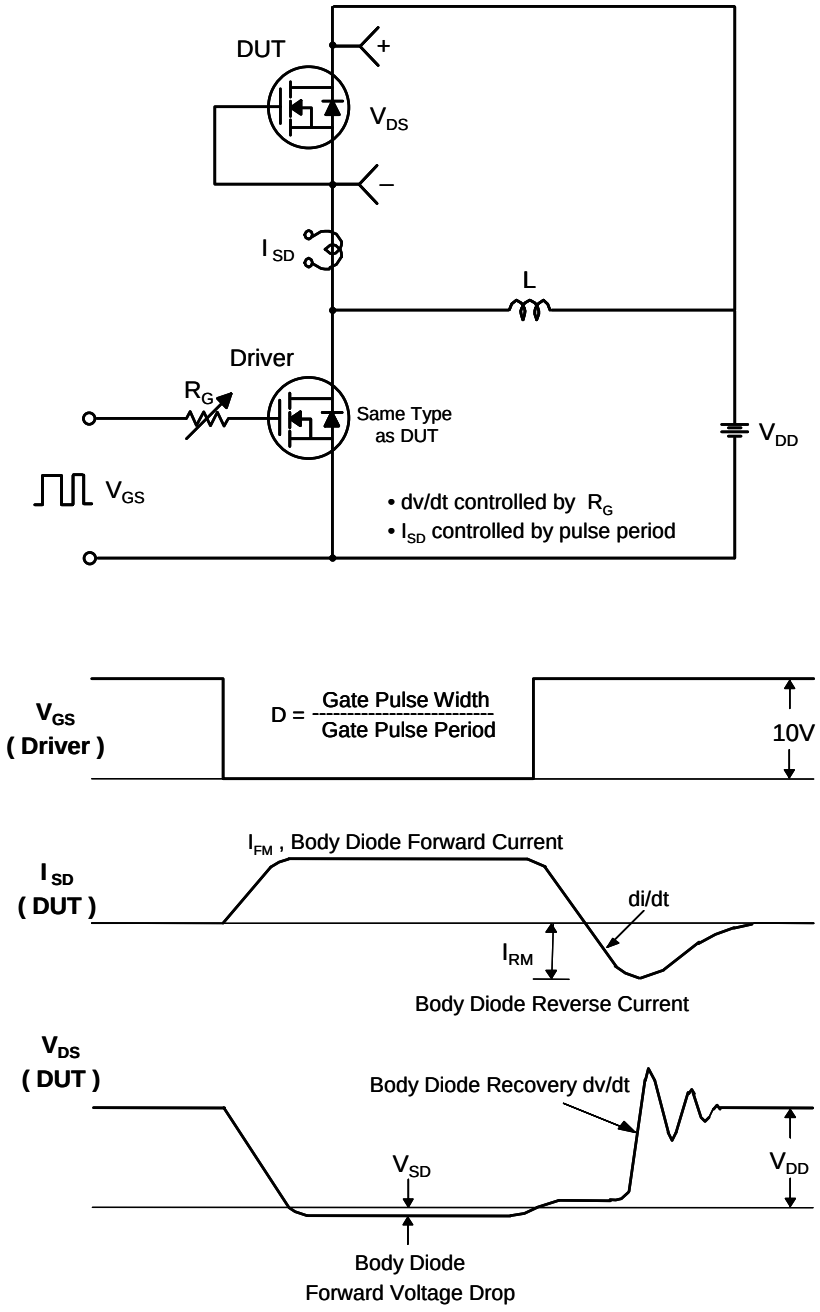
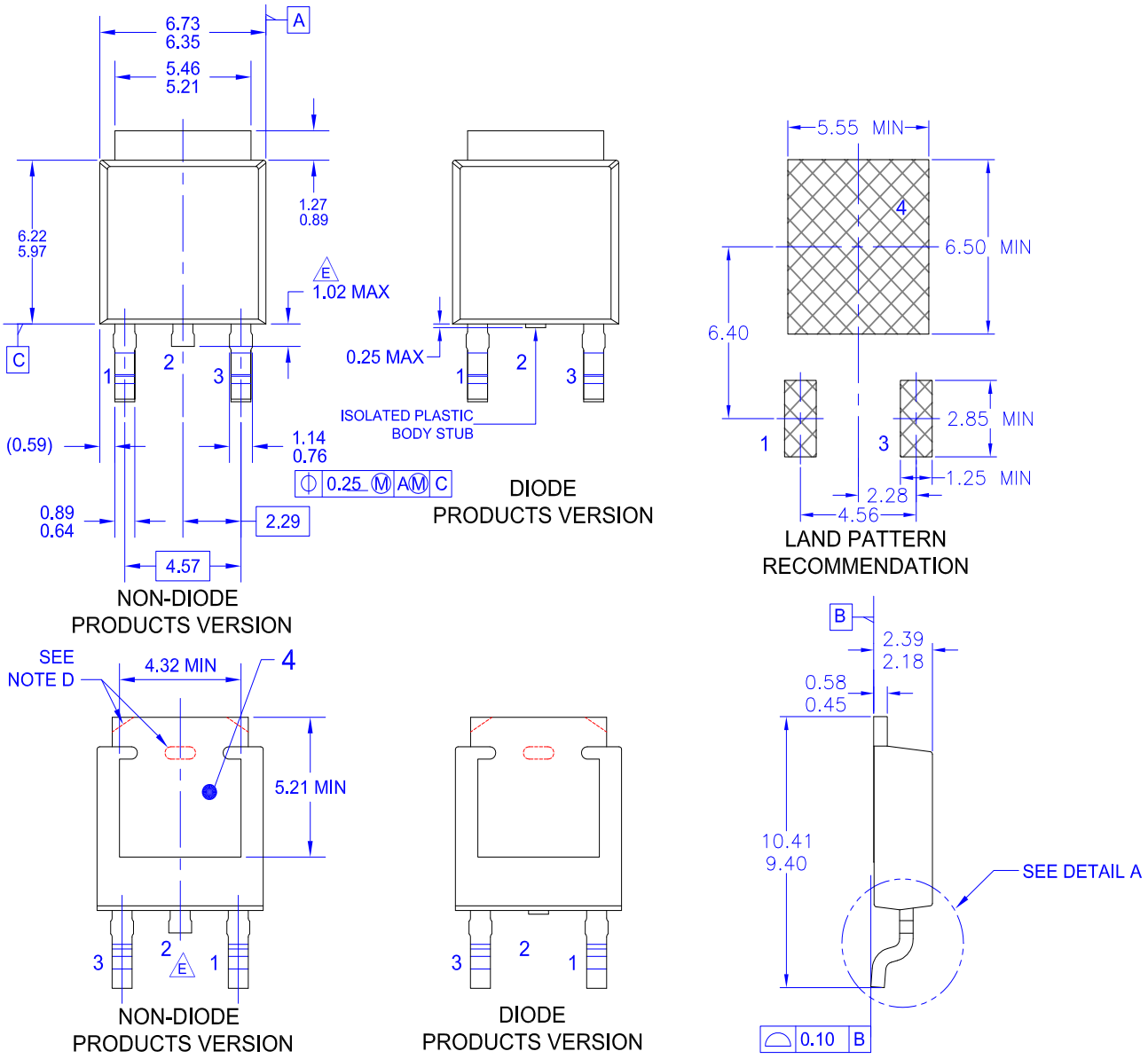


Figure 15. Peak Diode Recovery dv/dt Test Circuit & Waveforms





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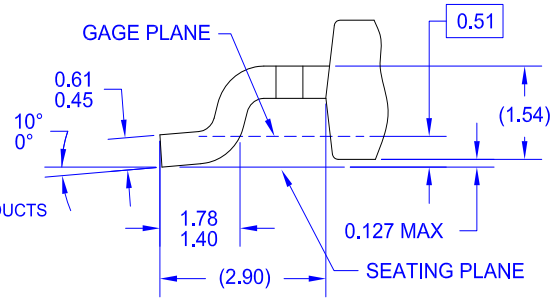
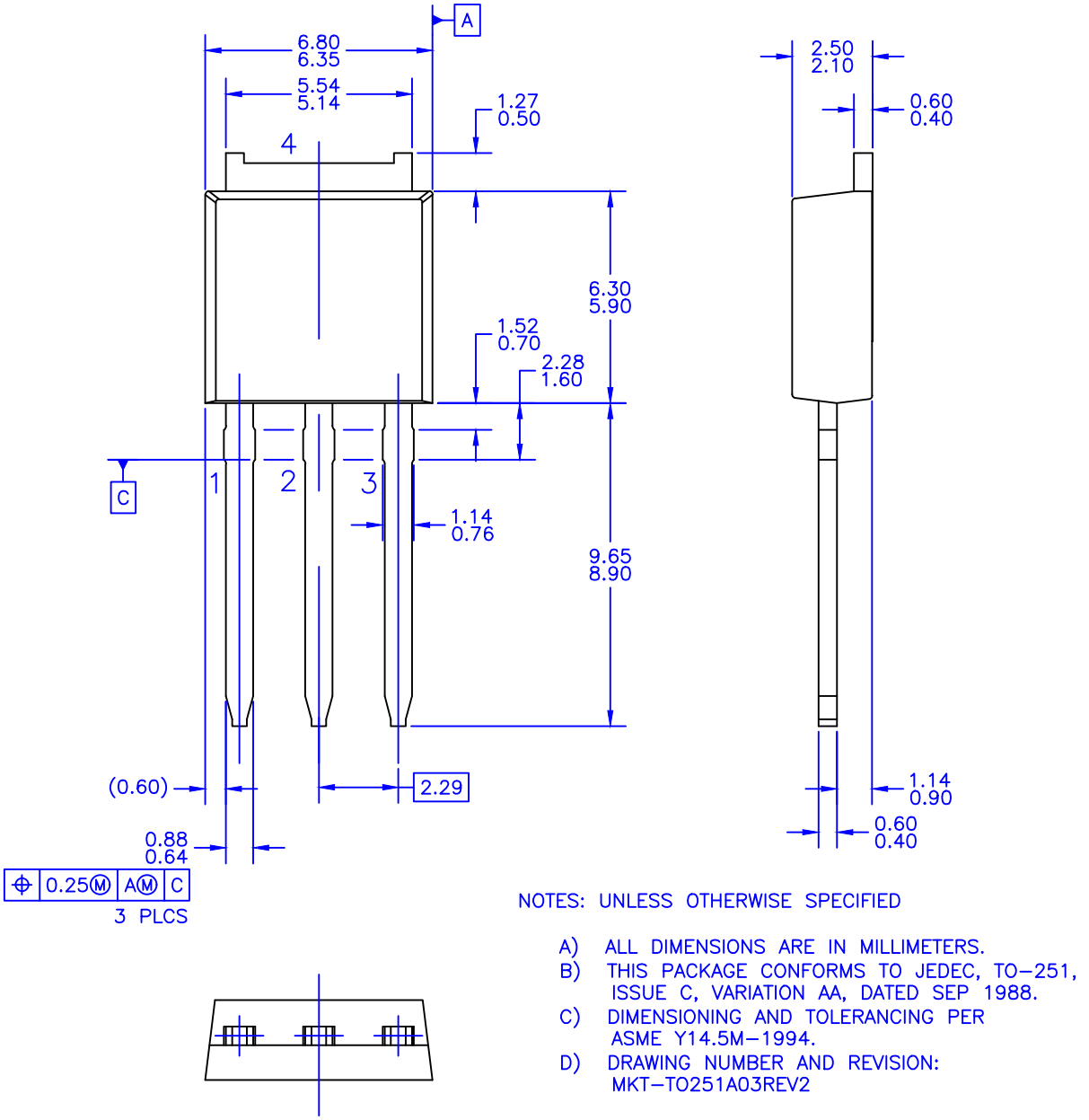


DETAIL A
(ROTATED -90°)
SCALE: 12X



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