

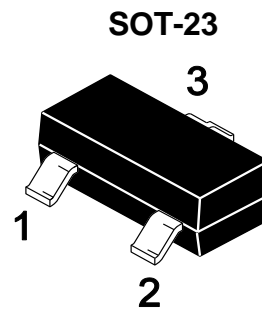


PJM60H12MNSA

N-Channel Depletion mode MOSFETS

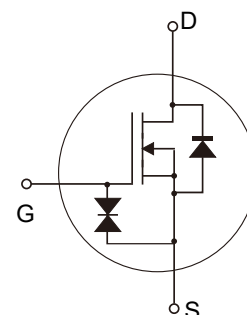
Features

- ◆ Halogen and Antimony Free
- ◆ Depletion Mode
- ◆ ESD improved Capability



1.Gate 2.Source 3.Drain

Marking: F501D



Absolute Maximum Ratings

($T_C=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSX}	600	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	0.03	A
Continuous Drain Current $T_C=70^{\circ}\text{C}$		0.024	
Pulsed Drain Current		0.12	
Power Dissipation	P_D	0.5	W
Gate Source ESD (HBM-C=100pF, R=1.5k Ω)	$V_{ESD(G-S)}$	300	V
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 to 150	$^{\circ}\text{C}$
Thermal Characteristics			
Parameter	Symbol	Typ.	Units
Maximum Junction-to-Ambient	$R_{\theta JA}$	250	$^{\circ}\text{C/W}$



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Electrical Characteristics

(T_C=25°C, unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSX}	V _{GS} = -5V, I _D = 250μA	600	-	-	V
Gate Leakage Current	I _{GSS}	V _{GS} = ±10V	-	-	±100	nA
Off-state Drain to Source Current	I _{D(off)}	V _{DS} = 600V, V _{GS} = -5V	-	-	0.1	μA
		V _{DS} = 480V, V _{GS} = -5V, T _a = 125°C	-	-	10	μA
ON Characteristics						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = 3V, I _D = 8μA	-2.7	-1.8	-1	V
On-state drain current	I _{DSS}	V _{GS} = 0V, V _{DS} = 25V	12	-	-	mA
Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} = 0V, I _D = 3mA	-	350	700	Ω
		V _{GS} = 10V, I _D = 16mA	-	400	800	
Dynamic Characteristics						
Forward transconductance	g _{fs}	V _{DS} = 50V, I _D = 0.01A	8	17	-	mS
Input Capacitance	C _{iss}	V _{DS} = 25V, V _{GS} = -5V, f = 1MHz	-	50	-	pF
Output Capacitance	C _{oss}		-	4.53	-	
Reverse Transfer Capacitance	C _{rss}		-	1.08	-	
Switching Characteristics						
Turn-On Delay Time	t _{d(on)}	V _{DD} = 300V, V _{GS} = -5...7V R _G = 6Ω, I _D = 0.01A	-	9.9	-	ns
Turn-On Rise Time	t _r		-	55.8	-	
Turn-Off Delay Time	t _{d(off)}		-	56.4	-	
Turn-Off Fall Time	t _f		-	136	-	
Total Gate Charge	Q _g	V _{DD} = 400V, V _{GS} = -5V to 5V, I _D = 0.01A	-	1.14	-	nC
Gate-Source Charge	Q _{gs}		-	0.5	-	
Gate-Drain Charge	Q _{gd}		-	0.37	-	
Drain-source Diode Characteristics						
Diode Forward Current	I _S	T _a = 25°C	-	-	0.025	A
Pulse Diode Forward Current	I _{SM}		-	-	0.1	A
Forward Diode Voltage	V _{SD}	V _{GS} = -5V, I _F = 16mA	-	-	1.2	V
Gate-source Zener diode						
Gate-source breakdown voltage	V _{GSO}	I _{GS} = ±1mA (Open Drain)	20	-	-	V



Ratings And Characteristic Curves

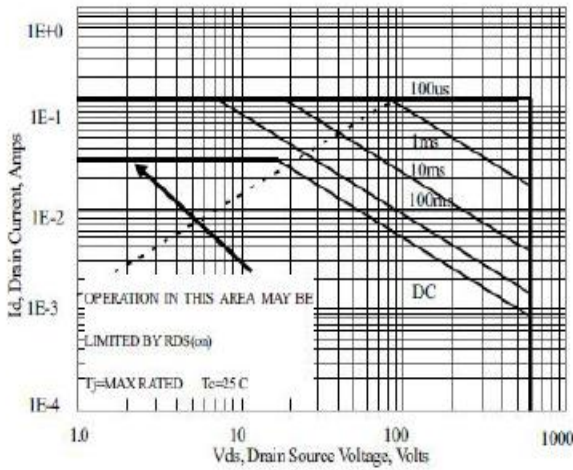


Figure 1 Maximum Forward Bias Safe Operating Area

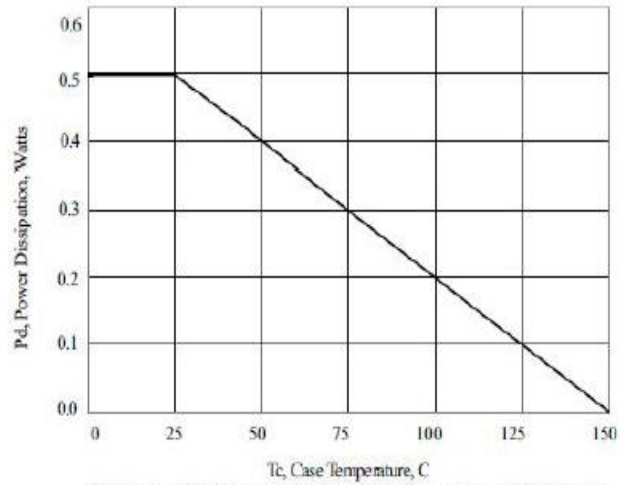


Figure 2 Maximum Power Dissipation vs Case Temperature

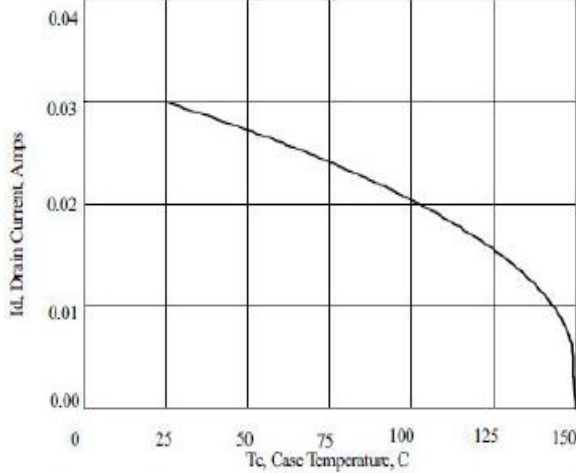


Figure 3 Maximum Continuous Drain Current vs Case Temperature

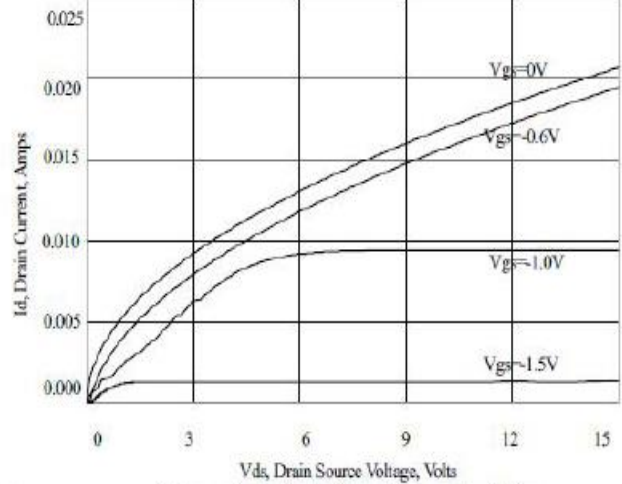


Figure 4 Typical Output Characteristics

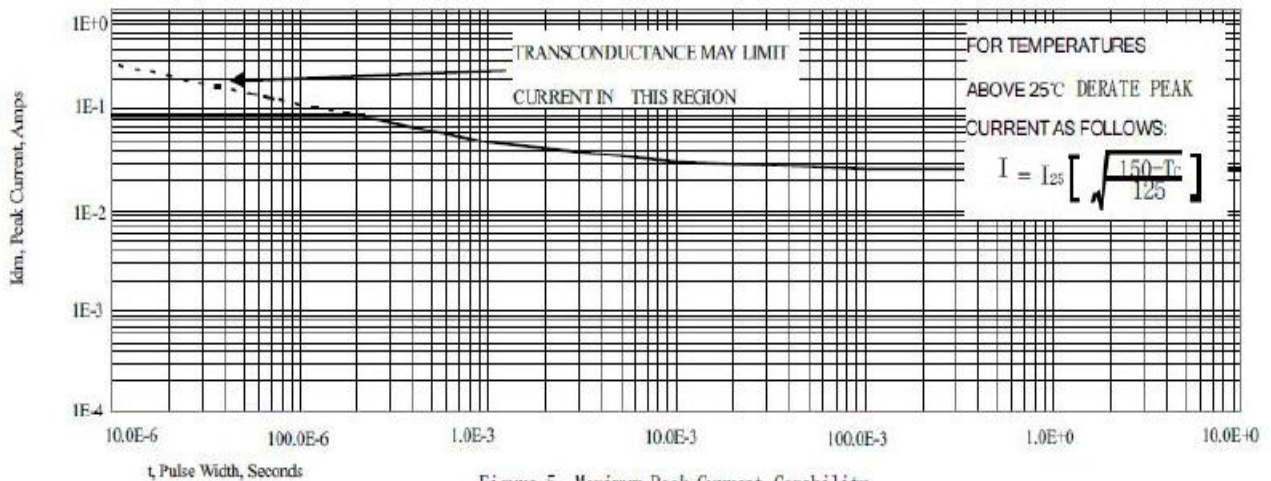


Figure 5 Maximum Peak Current Capability



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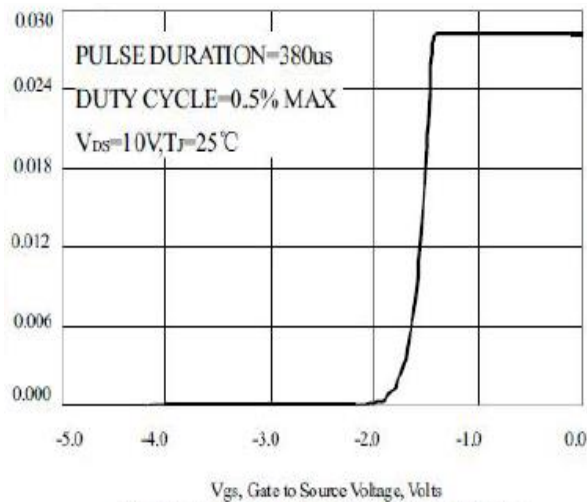


Figure 6 Typical Transfer Characteristics

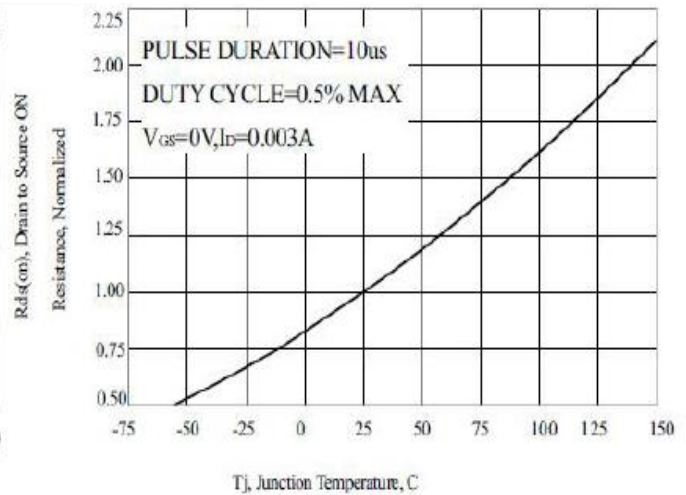


Figure 7 Typical Drain to Source ON Resistance vs Junction Temperature

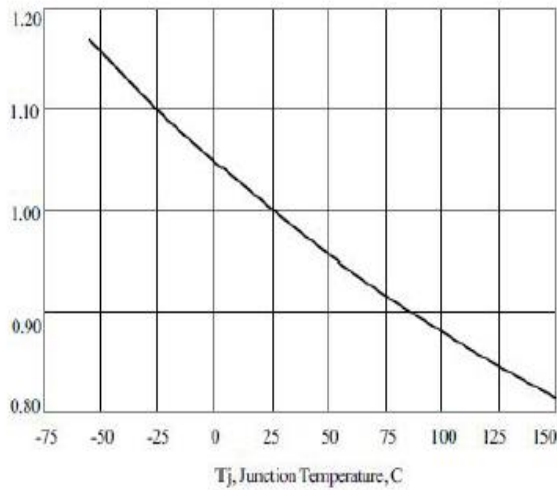


Figure 8 Typical Threshold Voltage vs Junction Temperature

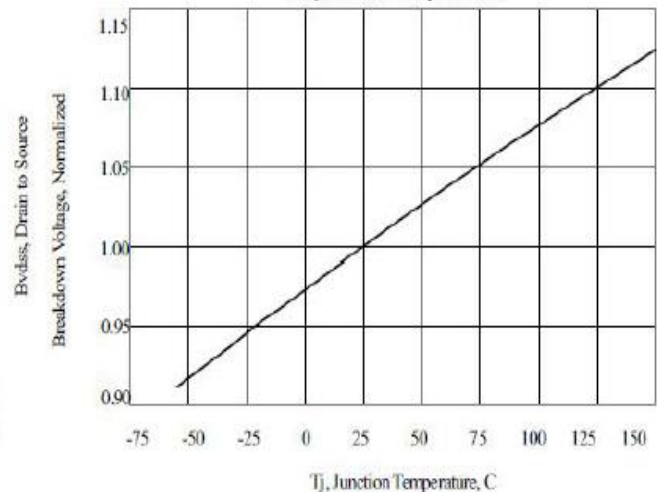


Figure 9 Typical Breakdown Voltage vs Junction Temperature

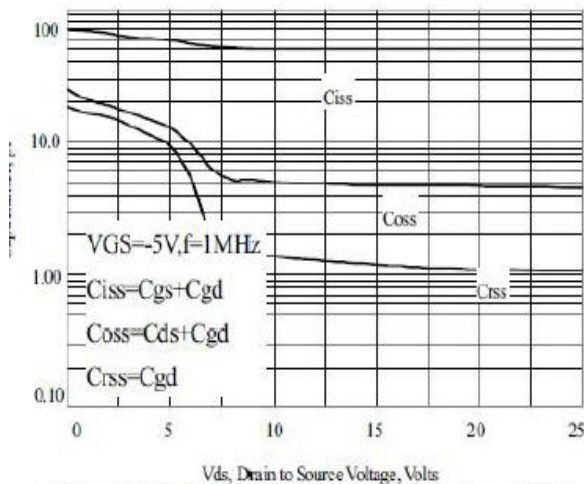


Figure 10 Typical Capacitance vs Drain to Source Voltage

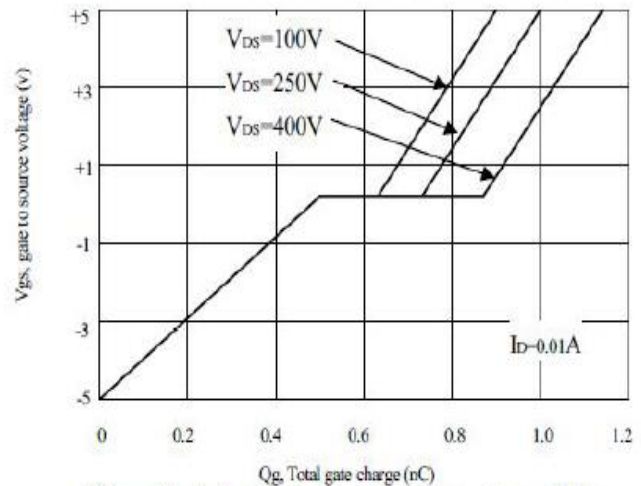


Figure 11 Typical Gate Charge vs Gate to Source Voltage



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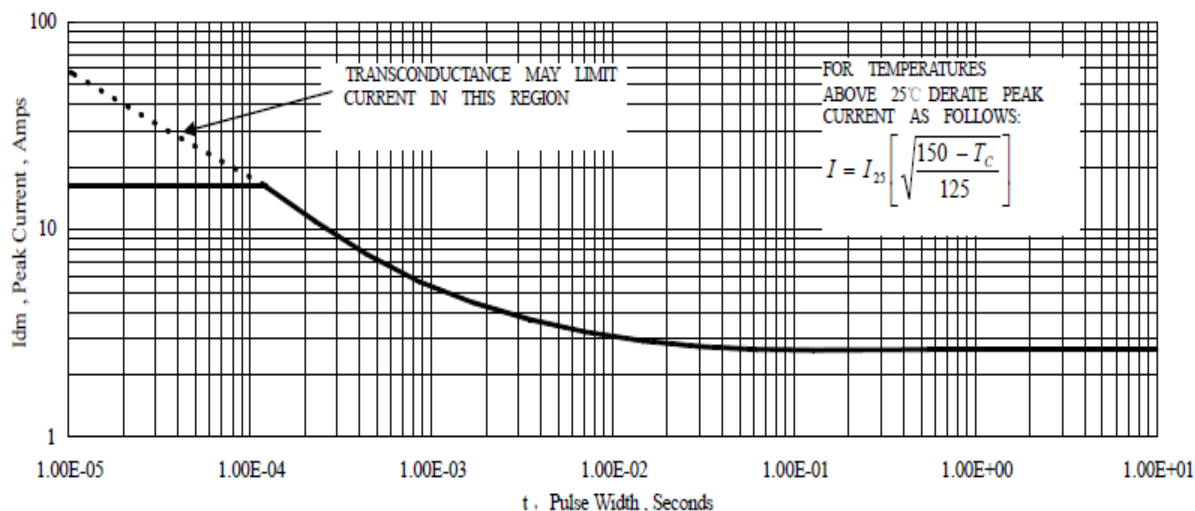


Figure 6 Maximum Peak Current Capability

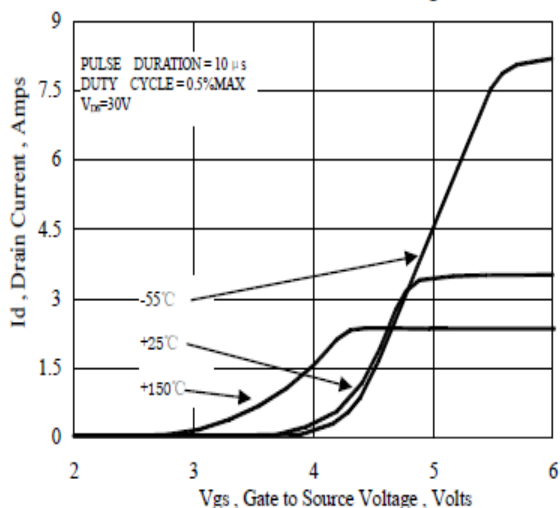


Figure 7 Typical Transfer Characteristics

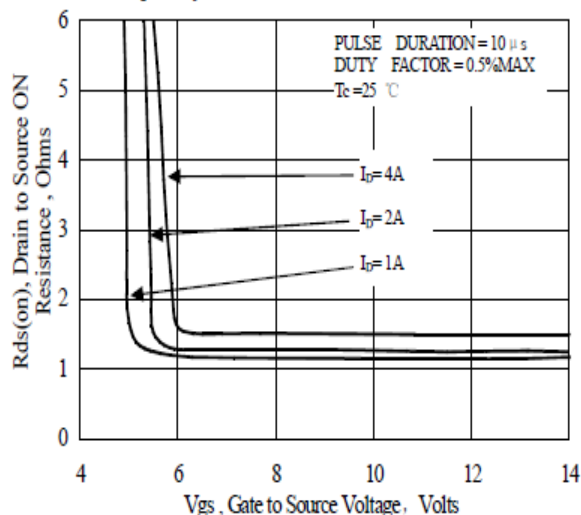


Figure 8 Typical Drain to Source ON Resistance vs Gate Voltage and Drain Current

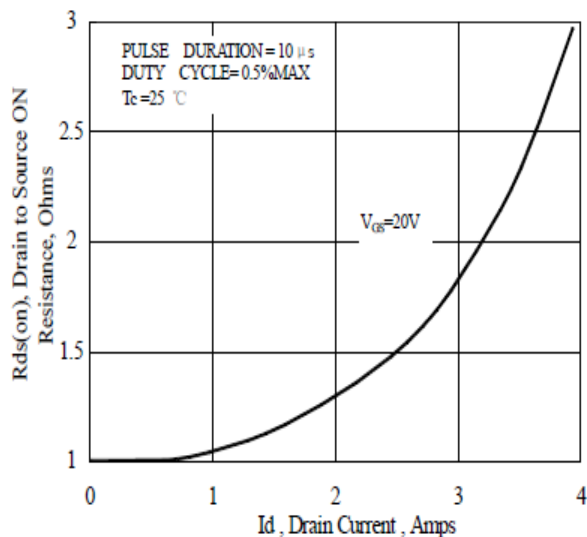


Figure 9 Typical Drain to Source ON Resistance vs Drain Current

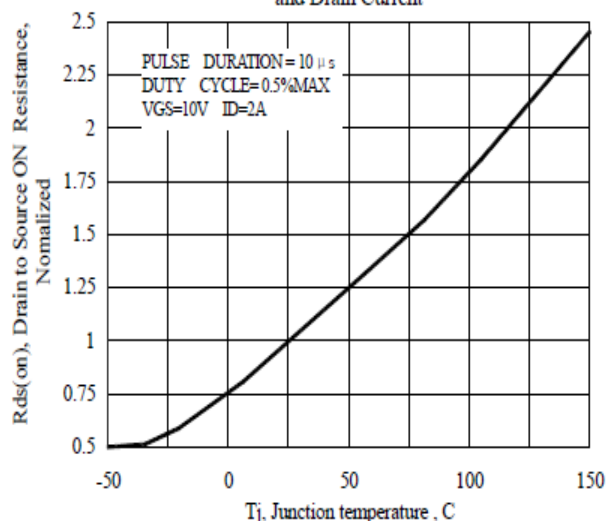


Figure 10 Typical Drain to Source on Resistance vs Junction Temperature

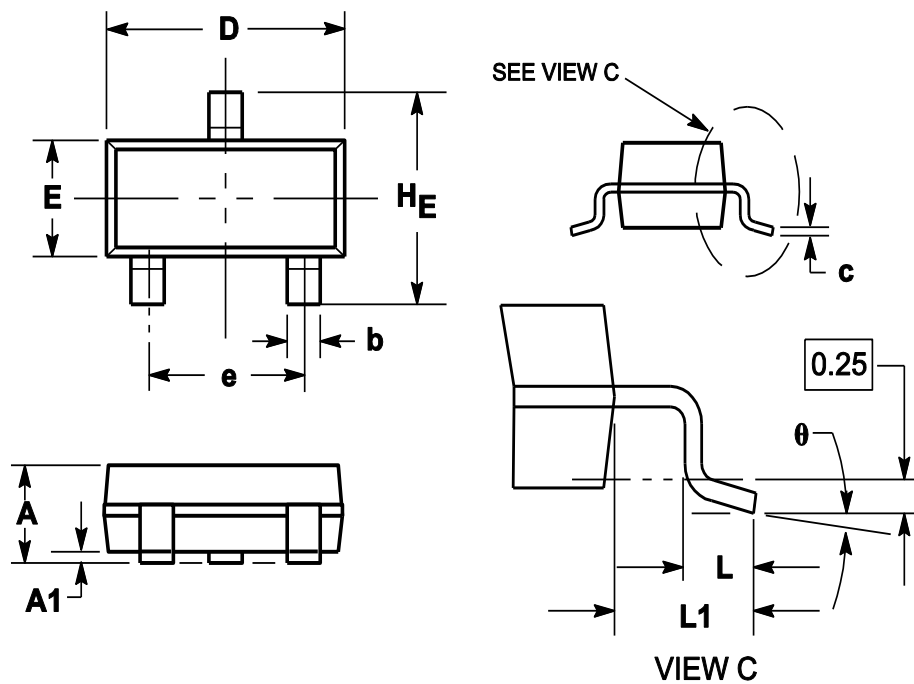


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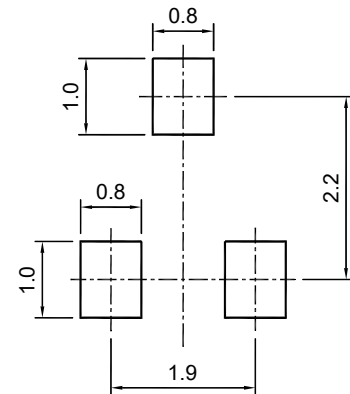
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Package Outline

SOT-23



Symbol	Dimensions in millimeter		
	Min.	Typ.	Max.
A	0.900	1.025	1.150
A1	0.000	0.050	0.100
b	0.300	0.400	0.500
c	0.080	0.115	0.150
D	2.800	2.900	3.000
E	1.200	1.300	1.400
HE	2.250	2.400	2.550
e	1.800	1.900	2.000
L1	0.550REF		
L	0.300		0.500
θ	0°		8°



SOT-23

Recommended soldering pad

Ordering Information

Device	Package	Shipping
PJM60H12MNSA	SOT-23	3000/Reel&Tape(7inch)