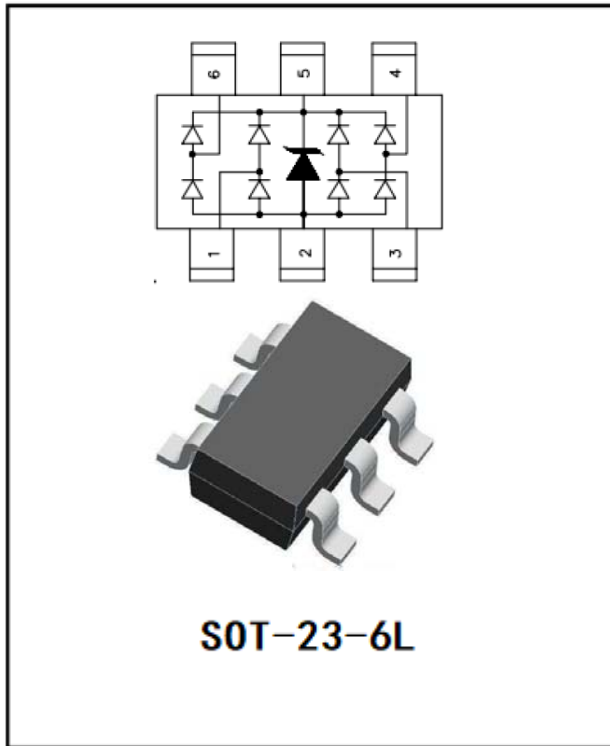


4-Line Low Capacitance TVS Diode Array

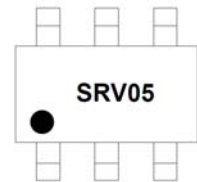


Features

- Low capacitance: 1.5pF typical (I/O to I/O)
- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- Up to 4 lines and one power line protects
- RoHS Compliant

Mechanical Characteristics

- Package: SOT-23 6L
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram below
- Marking Information: See Below



SRV05 = Device Marking Code
Dot denotes Pin1

■ Absolute Maximum Ratings (Ta=25°C unless otherwise specified)

PARAMETER	SYMBOL	VALUE	UNIT
Operating Temperature Range	T _J	-55 to +125	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C
ESD per IEC 61000-4-2 (Air)	V _{ESD}	±30	KV
ESD per IEC 61000-4-2 (Contact)		±30	KV
Peak Pulse Power(8/20μs)	P _{Pk}	500	W
Peak Pulse Current(8/20μs) , any I/O pin to ground	I _{PP}	25	A
Peak Pulse Current(8/20μs) , 4 I/O pins connected together to ground	I _{PP}	70	A



ASRV05-4

■Electrical Characteristics (T_a=25°C Unless otherwise specified)

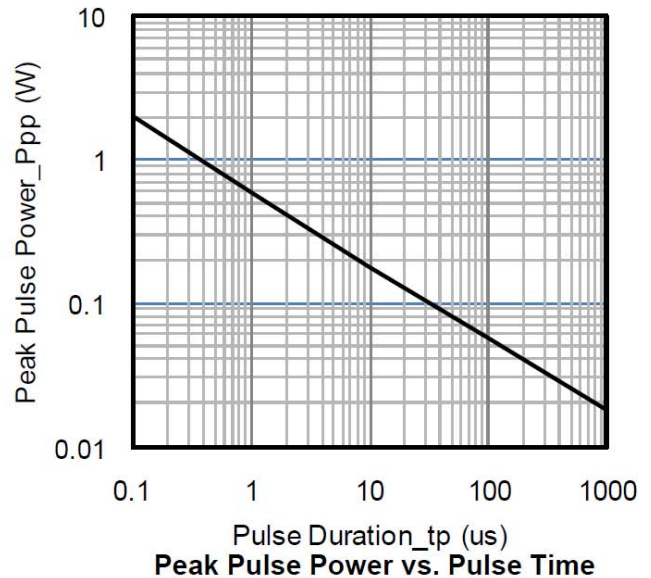
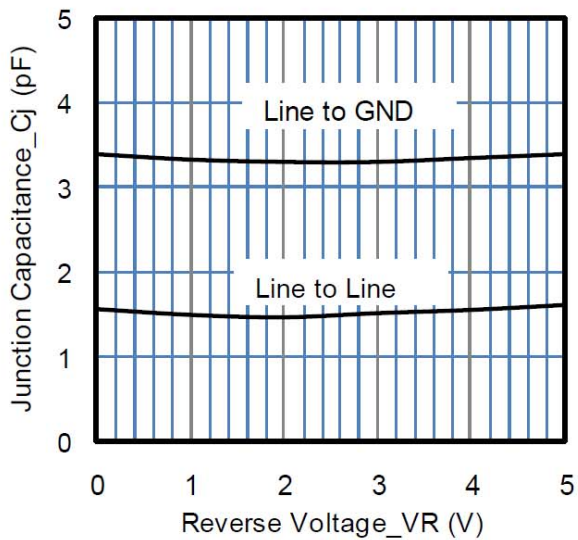
PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse Working Voltage	V _{RWM}	V	Pin 5 to Pin 2			5
Reverse Leakage Current	I _R	uA	V _{RWM} =5V, Pin 5 to Pin 2			1
Breakdown Voltage	V _(BR)	V	I _T =1mA, Pin 5 to Pin 2	6		
Forward Voltage	V _F	V	I _F = 15mA			1.2
Clamping Voltage	V _C	V	I _{PP} = 1A (8/20μs pulse), any I/O pin to ground			12
Clamping Voltage	V _C	V	I _{PP} = 25A (8/20μs pulse), any I/O pin to ground			20
Clamping Voltage	V _C	V	I _{PP} = 70A (8/20μs pulse), 4 I/O pins connected together to ground			20
Junction Capacitance	C _J	pF	V _R = 0V, f = 1MHz, between I/O pins		1.5	
Junction Capacitance	C _J	pF	V _R = 0V, f = 1MHz, any I/O pin to ground		3.0	5.0

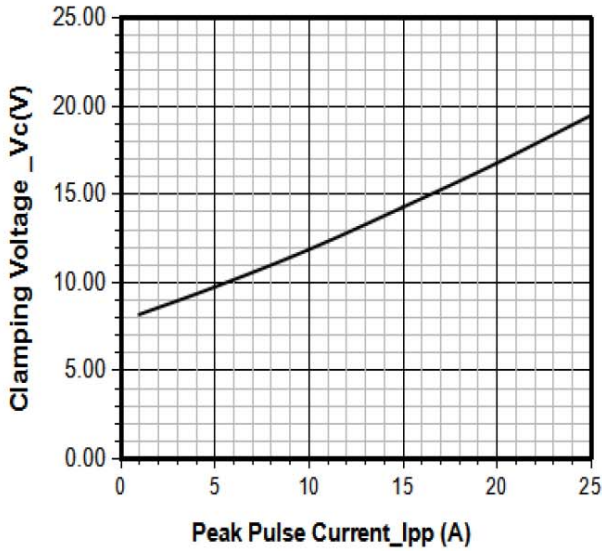
Note 1: I/O pins are Pin 1, 3, 4 and 6

■Thermal Characteristics (T_a=25°C Unless otherwise specified)

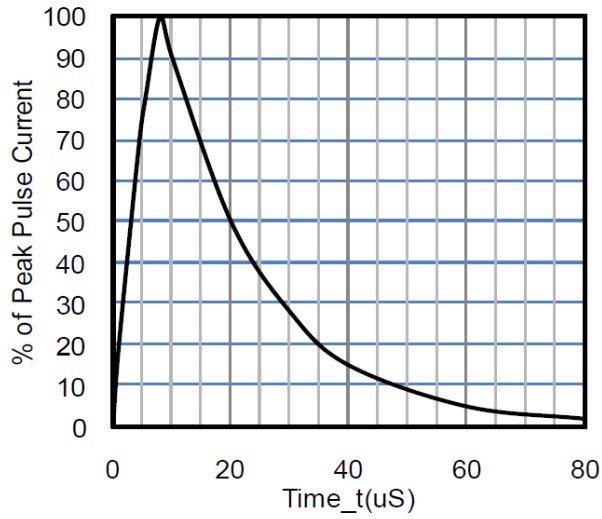
PARAMETER	SYMBOL	UNIT	SRV05-4
Thermal Resistance(Typical)	R _{θJ-A}	°C/W	357
	R _{θJ-C}	°C/W	143

■Typical Performance Characteristics (T_a=25°C unless otherwise Specified)

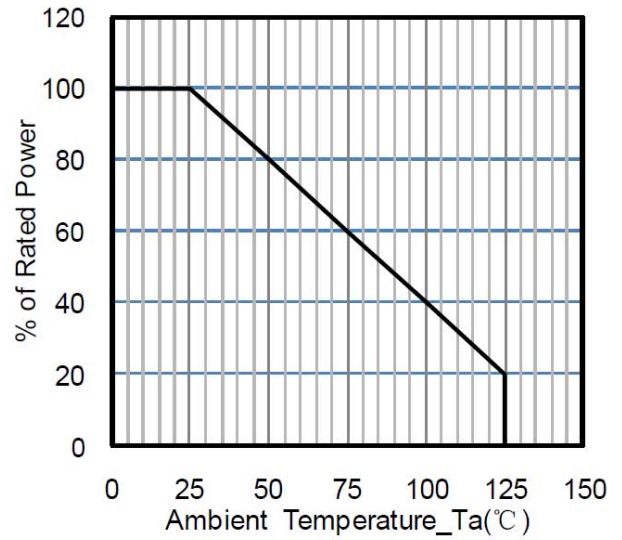




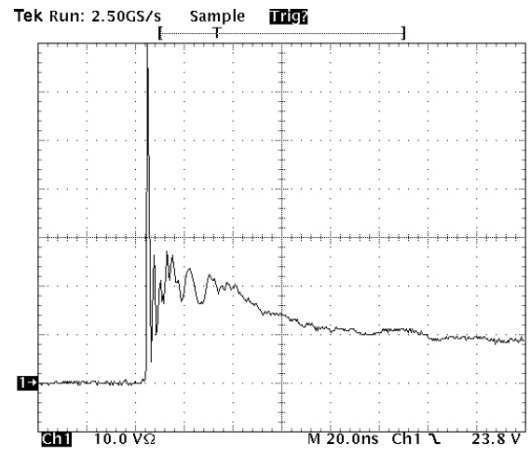
Clamping Voltage vs. Peak Pulse Current



8 X 20μs Pulse Waveform



Power Derating Curve



ESD Clamping Voltage

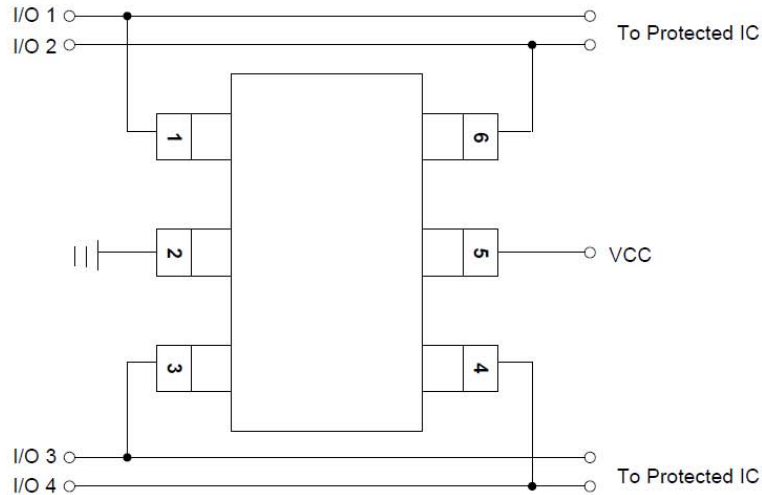
8 kV Contact per IEC61000-4-2



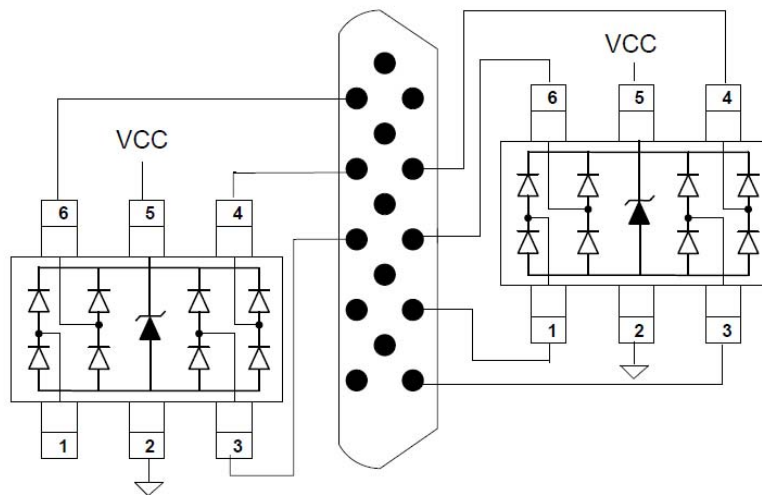
ASRV05-4

Typical Application

The ASRV05-4 is designed to protect four data lines from transient over-voltages by clamping them to fixed reference. When the voltage on the protected line exceeds the reference voltage (plus diode V_F) the steering diodes are forward biased, conducting the transient current away from the sensitive circuitry. Data lines are connected at pins 1, 3, 4 and 6. The negative reference (REF1) is connected at pin 2. This pin should be connected directly to a ground plane on the board for best results. The path length is kept as short as possible to minimize parasitic inductance. The positive reference (REF2) is connected at pin 5.



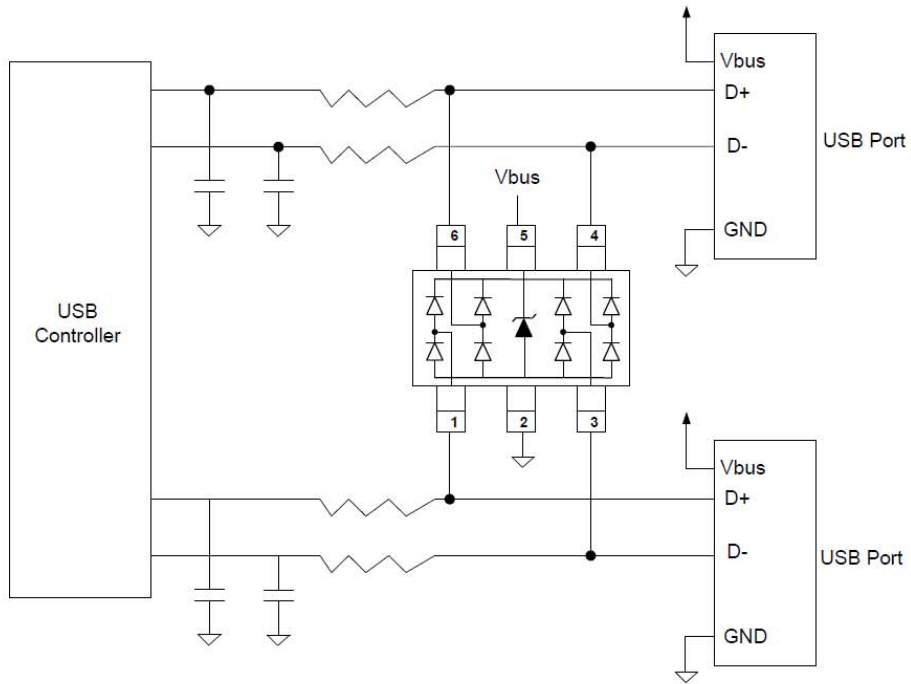
ASRV05-4 on Video Interface Application



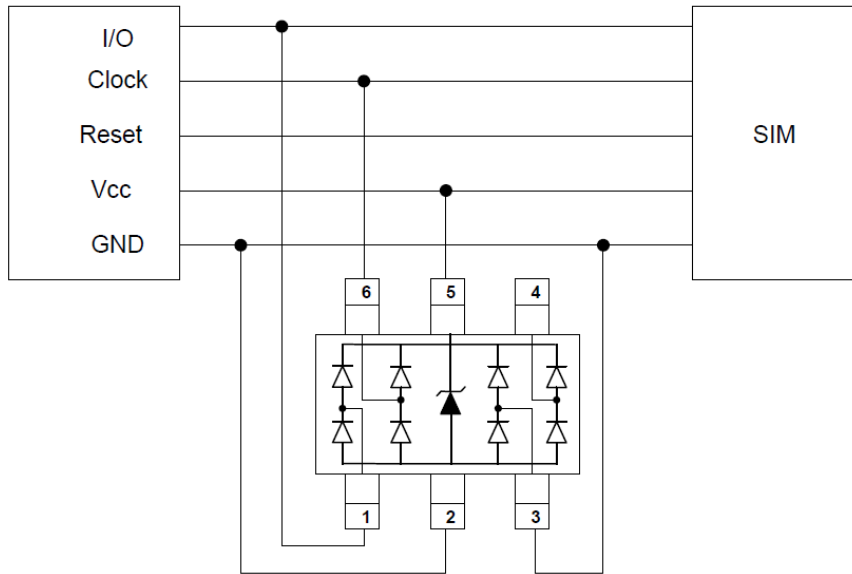


ASRV05-4

■ASRV05-4 on USB Port Application



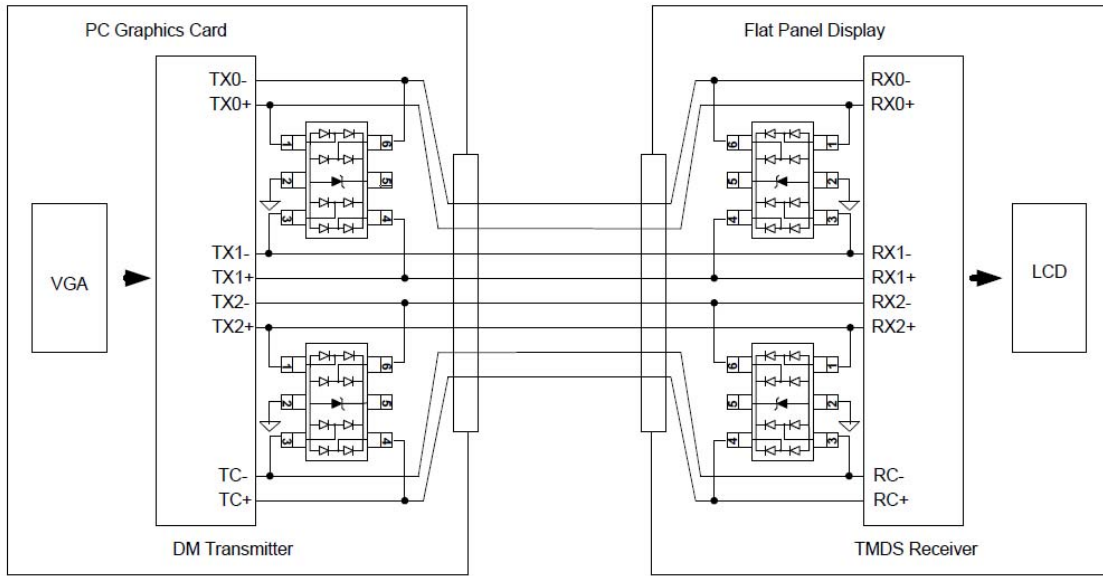
■ASRV05-4 on SIM Port Application



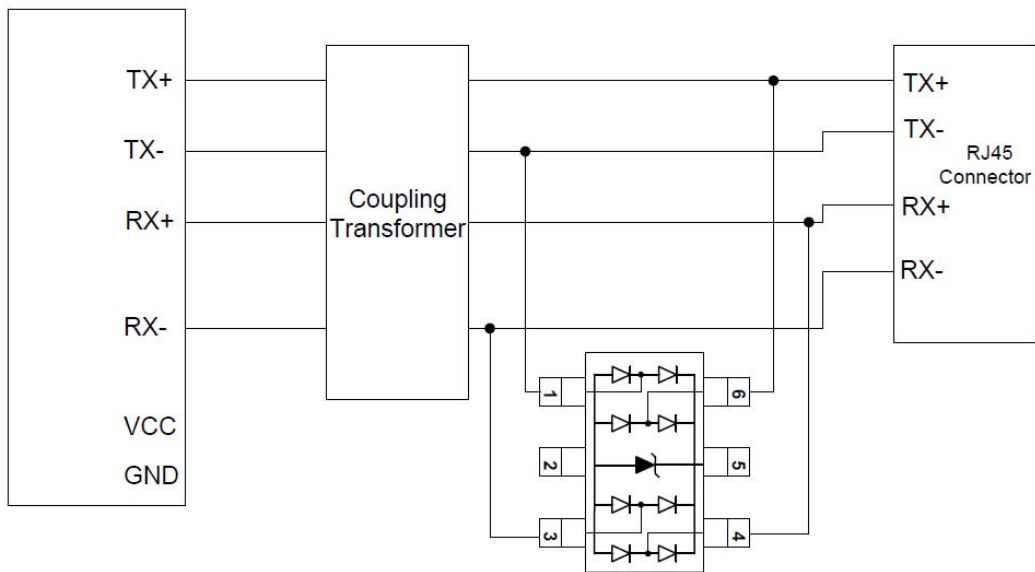


ASRV05-4

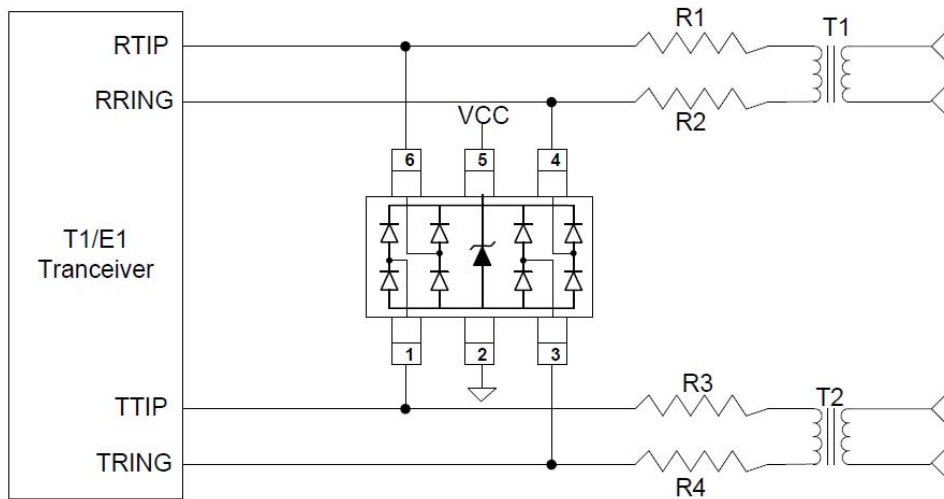
■ASRV05-4 on Digital Visual Interface (DVI) Application



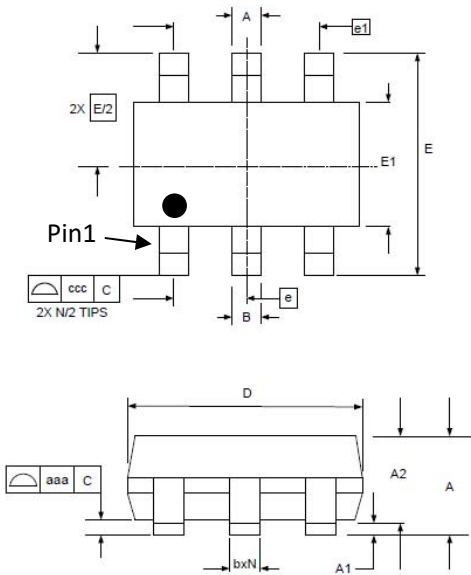
■ASRV05-4 on Ethernet 10/100 (Differential mode) Application



■ASRV05-4 on T1/E1 Interface Application

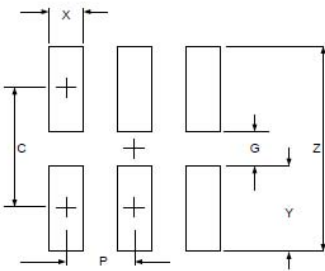


■SOT-23 6L Package Outline Drawing



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.90		1.45	0.035		0.057
A1	0.00		0.15	0.000		0.006
A2	0.90	1.15	1.30	0.035	0.045	0.051
b	0.25		0.50	0.010		0.020
c	0.08		0.22	0.003		0.009
D	2.80	2.90	3.10	0.110	0.114	0.122
E1	1.50	1.60	1.75	0.060	0.063	0.069
E	2.80 BSC			0.110 BSC		
e	0.95 BSC			0.037 BSC		
e1	1.90 BSC			0.075 BSC		
N	6			6		
aaa	0.10			0.004		
ccc	0.20			0.008		

■Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	2.50	0.098
G	1.40	0.055
P	0.95	0.037
X	0.60	0.024
Y	1.10	0.043
Z	3.60	0.141



ASRV05-4

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