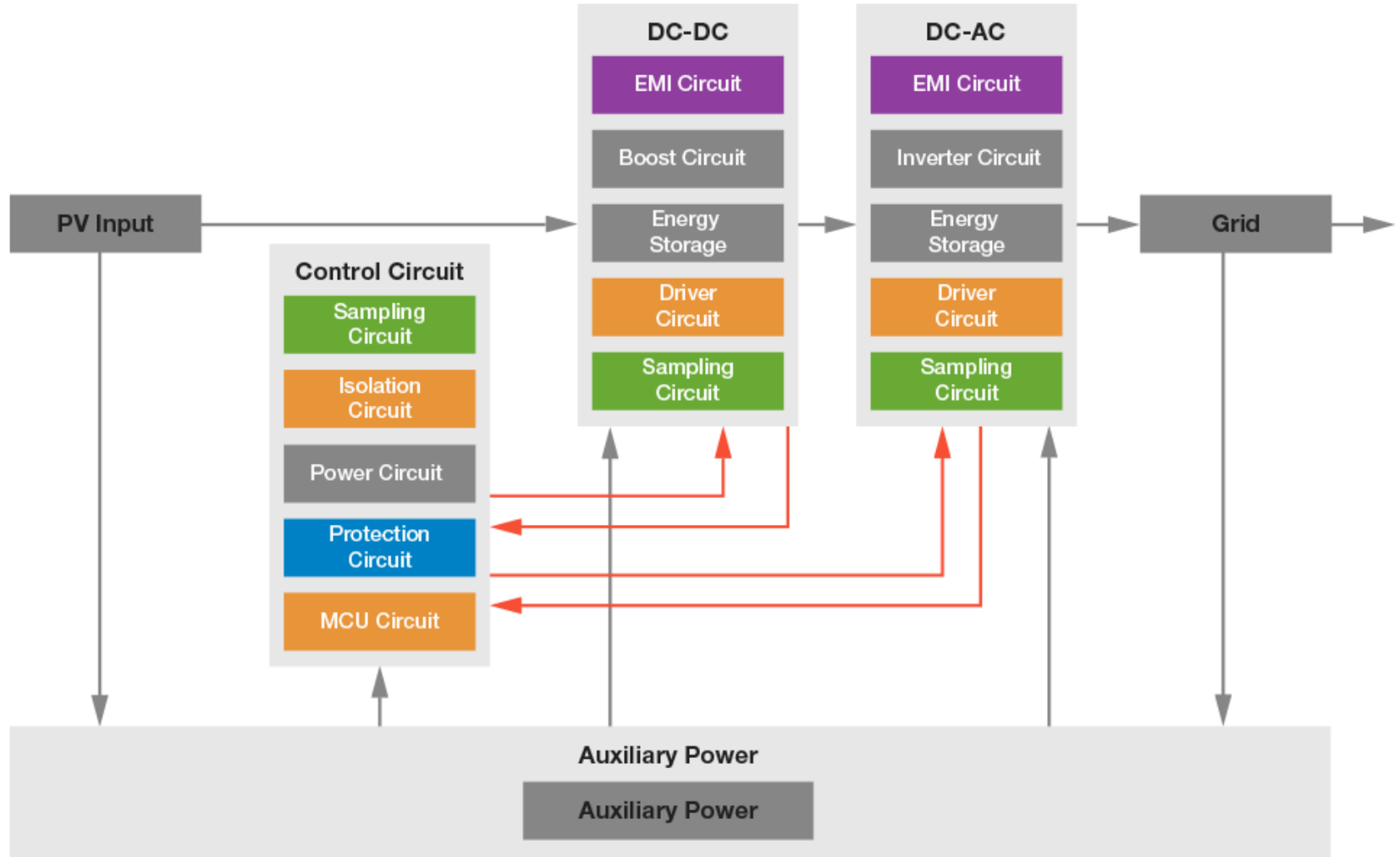


Solar Inverter - Block Diagram



Solar Inverter - Parts

CONTROL CIRCUIT - SAMPLING CIRCUIT

ANALOG SWITCHES

Product Name	Status	Description	Features	Package	Q-Level
DG4051E DG4052E DG4053E		Low Capacitance, Low Charge Injection, 4- / 8-Channel, Triple SPDT, ±5V/12V/5V/3V Analog Multiplexers	3V~16V single supply or ±3~± 8V dual supply; -65~+150°C	TSSOP16	
DG9454E		Low Capacitance, +12V/+5V/+3V, Triple SPDT (Triple 2:1) Analog Switch / Multiplexer	V+=3V to 16V, VL=2.5V to 5.5V; -65~+150°C	mQFN-16	

CURRENT SENSOR

Product Name	Status	Description	Features	Package	Q-Level
WSL		Power Metal Strip® Resistors, Low Value(down to 0.0005Ω), Surface Mount	1mohm~200mohm; -65°C~+170°C; ±0.5 tolerance; 75~400±ppm/°C	0603-2816	
WSLP		Power Metal Strip® Resistors, Very High Power (to 3W), Low Value(down to 0.5mΩ), Surface-Mount	1mohm~100mohm; -65°C~+170°C; ±0.5 tolerance; 75~400±ppm/°C	0603-2512	

SIGNAL CONDITIONING CAPACITOR

Product Name	Status	Description	Features	Package	Q-Level
VJ...W1BC		Surface Mount Multilayer Ceramic Chip Capacitors	6.3V~100V; 0.5pF~220uF; -55°C~+125°C	0402~1210	

SIGNAL CONDITIONING RESISTOR

Product Name	Status	Description	Features	Package	Q-Level
CRCW...C e3		Lead (Pb)-free Thick Film, Rectangular Commodity Chip Resistors	50V~200V; 1ohm~10Mohm; -55°C~+155°C; ±100ppm/°C	0402~1206	
D/CRCW-P		Lead (Pb)-Bearing Thick Film, Rectangular, Semi-Precision Chip Resistors	50V~500V; 10ohm~10Mohm; -55°C~+155°C; ±50ppm/°C	0402~2512	

SIGNAL DIODE

Product Name	Status	Description	Features	Package	Q-Level
BAS70-00...-06		Small Signal Schottky Diodes, Single and Dual	VR=70V; -55~+150°C	SOT-23	
BAT54...		Small Signal Schottky Diodes, Single and Dual	VR=30V; -55~+125°C	SOT-23	
BAV99		Small Signal Switching Diode, Dual in Series	VR=70V; -55~+150°C	SOT-23	

Solar Inverter - Parts

CONTROL CIRCUIT - ISOLATION CIRCUIT

PULL-UP/ DROPDOWN RESISTOR

Product Name	Status	Description	Features	Package	Q-Level
CRA06E, CRA06S		Thick Film Chip Resistor Array	10R to 1M; -55°C to +155°C ±1, ±2, ±5 tolerance; 100, 200±ppm/°C	0606, 0612	
CRA06P		Thick Film Chip Resistor Array	10R to 1M; -55°C to +155°C; ±1, ±2, ±5 tolerance; 100, 200±ppm/°C	0606, 0612	
CRA12E, CRA12S		Thick Film Chip Resistor Array	10R to 1M; -55°C to +155°C ±1, ±2, ±5 tolerance; 100, 200±ppm/°C	1220, 1225	

CONTROL CIRCUIT - POWER CIRCUIT

TANTALUM CAPACITOR

Product Name	Status	Description	Features	Package	Q-Level
293D		Solid Tantalum Surface Mount Chip Capacitors TANTAMOUNT™, Molded Case, Standard Industrial Grade	4~75V; 0.10µF~1000µF	SMD A-E, V Case	
592D		Solid Tantalum Chip Capacitors TANTAMOUNT™, Low Profile, Low ESR, Conformal Coated, Maximum CV	4~35V, 1µF~3300µF, 2.5mm down to 1.3mm Heigh	SMD A-X Case	
595D		Solid Tantalum Chip Capacitors TANTAMOUNT™, Conformal Coated, Maximum CV	4~50V; 0.1µF~1500µF	SMD T~R Case	
T42		Solid Tantalum Surface-Mount Capacitors TANTAMOUNT Low ESR, Hi-Rel COTS, Built-in-Fuse, Leadframeless Molded	16~75V; 10µF~470µF	SMD M2 Case	
T55		vPolyTan™ Polymer Surface Mount Chip Capacitors, Molded Case, High Performance Type	2.5~63V; 3.3µF~1000µF	A, B, D, J, P, T, V, Z Case	
TR3		Solid Tantalum Surface Mount Chip Capacitors TANTAMOUNT™, Molded Case, Low ESR	4~75V; 0.47µF~1000µF	SMD A-E, V, W Case	

CONTROL CIRCUIT - PROTECTION CIRCUIT

ESD

Product Name	Status	Description	Features	Package	Q-Level
VCAN26A2-03S		Bidirectional Symmetrical (BiSy) Low Capacitance, Dual-Line ESD Protection Diode in SOT-23	VRWM=26.5V; VESD=±30kV; -55~+150°C	SOT-23	

Solar Inverter - Parts

CONTROL CIRCUIT - MCU CIRCUIT

OSCILLATORS

Product Name	Status	Description	Features	Package	Q-Level
XOSM-533		Surface Mount Oscillator	VIN=3.3V; 1.544MHz~100.000MHz; ±25ppm, ±50ppm, ±100ppm; -40~+85°C	SMD	
XOSM-57		Surface Mount Oscillator	VIN=5V; 1.5MHz~100.000MHz ±25ppm, ±50ppm, ±100ppm; -40~+85°C	SMD	
XOSM-573		Surface Mount Oscillator	VIN=3.3V; 1.5MHz~100.000MHz; ±25ppm, ±50ppm, ±100ppm; -40~+85°C	SMD	

SIGNAL MOSFET

Product Name	Status	Description	Features	Package	Q-Level
2N7002K		N Channel 60V (D-S) MOSFET	VDS=60V; rds(on)/10V=2ohm; Qg/10V=0.4nC; Single N	SOT-23	

DC-DC - EMI CIRCUIT

FILTERING CAPACITOR

Product Name	Status	Description	Features	Package	Q-Level
MKP383		AC and Pulse Double Metallized Polypropylene Film Capacitors	Up to 2500VDC 0.00047µF to 4.7µF	Radial Boxed	
MKP385		AC and Pulse Metallized Polypropylene Film Capacitors	Up to 2500VDC; 0.00047µF to 82 µF	Radial Boxed	

Y1 CAPACITOR

Product Name	Status	Description	Features	Package	Q-Level
VY1 Compact Series		Class Y1, 500VAC	500VAC at 50Hz, 1500VDC; 10pF~4700pF	Radial	
VY1 Series		Class Y1, 500VAC	500VAC at 50Hz, 1500VDC; 10pF~4700pF	Radial	

Solar Inverter - Parts

DC-DC - BOOST CIRCUIT

ULTRAFAST RECOVERY DIODE

Product Name	Status	Description	Features	Package	Q-Level
VS-E5PH3012L-N3		1200V ultrafast recovery diode	IF(AV)=30A; VF=1.7V; trr=32ns	TO-247AD 2L	
VS-E5PH6012L-N3		1200V ultrafast recovery diode	IF(AV)=60A; VF=1.7V; trr=38ns	TO-247AD 2L	
VS-E5PX3012L-N3		1200V ultrafast recovery diode	IF(AV)=30A; VF=2.1V; trr=26ns	TO-247AD 2L	
VS-E5PX6012L-N3		1200V ultrafast recovery diode	IF(AV)=60A; VF=2.1V; trr=30ns	TO-247AD 2L	

DC-DC - ENERGY STORAGE

ALUMINUM ELECTROLYTIC CAPACITOR

Product Name	Status	Description	Features	Package	Q-Level
157 PUM-SI		ower Ultra Miniature Snap-In Aluminum Electrolytic Capacitor	500V; 56µF to 2200µF; Life at 85°C = 5000h	Snap-In 22x25 to 35x60	
159 PUL-SI		Power Ultra Long Life Snap-In Aluminum Electrolytic Aluminum Electrolytic Capacitor	500V; 56µF to 1800µF; Life at 105°C = 5000h	Snap-In 22x25 to 35x60	
193 PUR-SI Solar		Snap-In long useful life Aluminum Electrolytic Capacitor	500V; 220µF to 560µF; Life at 105°C = 6000h	Snap-In 35x30 to 35x60	

FILM CAPACITOR

Product Name	Status	Description	Features	Package	Q-Level
MKP1848C DC-Link		DC-link film capacitor	Up to 500µF; Up to 1200V; No electrolyte, long life		Radial Boxed
MKP1848S DC-Link		DC-link film capacitor	Up to 100µF; Up to 1000V; Slim line, low building height	Radial Boxed	
MKT1820		DC Film Capacitors	1000pF to 560µF; Up to 1000V; Up to 150°C	Radial Boxed	

Solar Inverter - Parts

DC-DC - DRIVER CIRCUIT

GATE DIODE

Product Name	Status	Description	Features	Package	Q-Level
1N4148W		Small Signal Fast Switching Diode	VR=75V	SMD SOD-123	
BAS16WS		Small Signal Fast Switching Diode	VR=75V	SMD SOD-123	

GATE RESISTOR

Product Name	Status	Description	Features	Package	Q-Level
CRCW....-37		Lead (Pb)-Bearing Thick Film, Rectangular Chip Resistors	200V, 500V; 5.1ohm~10Mohm; -55°C~+155°C; ±200ppm/°C	1206, 1210, 2512	

MLCC

Product Name	Status	Description	Features	Package	Q-Level
VJ X8R		Surface Mount Multilayer Ceramic Chip Capacitors for High Temperature	25V~100V; 330pF~220nF; -55°C~+150°C	0402~1210	
VJ...W1BC		Basic Commodity Series sur	6.3V~100V; 0.5pF~220uF; -55°C~+125°C	0402~1210	

OPTOCOUPLER

Product Name	Status	Description	Features	Package	Q-Level
VO3120		IGBT & MOSFET Driver	IO=2.5A; VCC=15~32V; ICC=2.5mA; CMR=25kV/us; VISO=5300V	DIP-8	
VOL3120		IGBT & MOSFET Driver	IO=2.5A; VCC=15~32V; ICC=2.5mA; CMR=48kV/us; VISO=5300V	LSOP-5	

Solar Inverter - Parts

DC-DC - SAMPLING CIRCUIT

NTC SENSOR

Product Name	Status	Description	Features	Package	Q-Level
NTCALUG01A		NTC Thermistor, Lug Sensor	4.7kohm to 100kohm at 25°C 5% tolerance; -40°C~+150°C	TH / Radial Ring-tongue Lug	
NTCALUG01T		NTC Thermistor, Lug Sensor	10kohm at 25°C; 2% tolerance; -40°C~+150°C	TH / Radial Ring-tongue Lug	

VOLTAGE DIVIDER RESISTOR

Product Name	Status	Description	Features	Package	Q-Level
CRCW...C e3		Lead (Pb)-free Thick Film, Rectangular Commodity Chip Resistors	50V~200V; 1ohm~10Mohm; -55°C~+155°C; 100±ppm/°C	0402~1206	
CRMV		Thick Film Chip Resistors, Medium Voltage	Up to 1415V; 150ohm~75Mohm; -55°C~+155°C; ±100ppm/°C	1206~2512	
D/CRCW-P		Lead (Pb)-Bearing Thick Film, Rectangular, Semi-Precision Chip Resistors	50V~500V; 10ohm~10Mohm; -55°C~+155°C; ±50ppm/°C	0402~2512	

DC-AC - EMI CIRCUIT

FILTERING CAPACITOR

Product Name	Status	Description	Features	Package	Q-Level
F1772S X2		Interference Suppression Film Capacitor Class X2 Radial MKT - 310VAC - Series Impedance Impedance - 85 °C/85% RH	310VAC; 10nF~2.2µF	Radial	
F339X1 330VAC		Interference Suppression Film Capacitor Class X1 Radial MKP 330VAC - Standard Across the Line	330VAC; 0.001µF~2.2µF	Radial	
F339X1 480VAC		Interference Suppression Film Capacitor Class X1 Radial MKP 480VAC - 3-Phase Across the Line	480VAC; 0.001µF~1.0µF	Radial	
MKP1847H		THB AC Filtering Metalized Polypropylene Film Capacitor Radial Type 85°C / 85% RH 1000h at UNAC	250VAC, 310VAC, 350VAC, 480VAC; 1µF~35 µF	Radial	

Y1 CAPACITOR

Product Name	Status	Description	Features	Package	Q-Level
VY1 Compact Series		Class Y1, 500VAC	500VAC at 50Hz, 1500VDC; 470pF~4700pF	Radial	
VY1 Series		Class Y1, 500VAC	500VAC at 50Hz, 1500VDC; 10pF~4700pF	Radial	

Solar Inverter - Parts

DC-AC - INVERTER CIRCUIT

POWER SWITCH

Product Name	Status	Description	Features	Package	Q-Level
SIHG21N65EF		N Channel 650V (D-S) MOSFET	VDS=650V; RDS(on)/10V=180mohm Qg/10V=71nC; Single N	TO-247AC	
SIHG24N65EF		N Channel 650V (D-S) MOSFET	VDS=650V; RDS(on)/10V=156mohm Qg/10V=81nC; Single N	TO-247AC	
SIHG28N65EF		N Channel 650V (D-S) MOSFET	VDS=650V; RDS(on)/10V=117mohm Qg/10V=97nC; Single N	TO-247AC	
SIHG33N65EF		N Channel 650V (D-S) MOSFET	VDS=650V; RDS(on)/10V=109mohm; Qg/10V=114nC; Single N	TO-247AC	
SIHG44N65EF		N Channel 650V (D-S) MOSFET	VDS=650V; RDS(on)/10V=73mohm; Qg/10V=185nC; Single N	TO-247AC	
SIHW61N65EF		N Channel 650V (D-S) MOSFET	VDS=650V; RDS(on)/10V=47mohm; Qg/10V=247nC; Single N	TO-247AD	

ULTRAFAST RECOVERY DIODE

Product Name	Status	Description	Features	Package	Q-Level
VS-E5PH3012L-N3		1200V ultrafast recovery diode	IF(AV)=30A; VF=1.7V; trr=32ns	TO-247AD 2L	
VS-E5PH6012L-N3		1200V ultrafast recovery diode	IF(AV)=60A; VF=1.7V; trr=38ns	TO-247AD 2L	
VS-E5PX3012L-N3		1200V ultrafast recovery diode	IF(AV)=30A; VF=2.1V; trr=26ns	TO-247AD 2L	
VS-E5PX6012L-N3		1200V ultrafast recovery diode	IF(AV)=60A; VF=2.1V; trr=30ns	TO-247AD 2L	
VS-EPH3007L-N3		650V Ultrafast Recovery Diode	IF(AV)=30A; VF=1.4V; trr=33ns	TO-247AD 2L	
VS-EPH6007L-N3		650V ultrafast recovery diode	IF(AV)=60A; VF=1.4V; trr=65ns	TO-247AD 2L	
VS-EPX3007L-N3		650V ultrafast recovery diode	IF(AV)=30A; VF=1.6V; trr=27ns	TO-247AD 2L	
VS-EPX6007L-N3		650V ultrafast recovery diode	IF(AV)=60A; VF=1.6V; trr=40ns	TO-247AD 2L	

Solar Inverter - Parts

DC-AC - DRIVER CIRCUIT

GATE DIODE

Product Name	Status	Description	Features	Package	Q-Level
1N4148W		Small Signal Fast Switching Diode	VR=75V	SMD SOD-123	
BAS16WS		Small Signal Fast Switching Diode	VR=75V	SMD SOD-123	

GATE RESISTOR

Product Name	Status	Description	Features	Package	Q-Level
CRCW....-37		Lead (Pb)-Bearing Thick Film, Rectangular, Chip Resistors	200V, 500V; 5.1ohm~10Mohm; -55°C~+155°C; ±200ppm/°C	1206, 1210, 2512	

MLCC

Product Name	Status	Description	Features	Package	Q-Level
VJ X8R		Surface Mount Multilayer Ceramic Chip Capacitors High Temperature	25V~100V; 330pF~220nF; -55°C~+150°C	0402~1210	
VJ....W1BC		Basic Commodity Series Surface Mount Multilayer Ceramic Chip Capacitors	6.3V~100V; 0.5pF~220uF; -55°C~+125°C	0402~1210	

OPTOCOUPLER

Product Name	Status	Description	Features	Package	Q-Level
VO3120		IGBT & MOSFET Driver	IO=2.5A; VCC=15~32V; ICC=2.5mA; CMR=25kV/us; VISO=5300V	DIP-8	
VOL3120		IGBT & MOSFET Driver	IO=2.5A; VCC=15~32V; ICC=2.5mA; CMR=48kV/us; VISO=5300V	LSOP-5	

Solar Inverter - Parts

DC-AC - ENERGY STORAGE

ALUMINUM ELECTROLYTIC CAPACITOR

Product Name	Status	Description	Features	Package	Q-Level
157 PUM-SI		Power Ultra Miniature Snap-In Aluminum Electrolytic Capacitor	500V; 56µF to 2200µF; Life at 85°C = 5000h	Snap-In 22x25 to 35x60	
159 PUL-SI		Power Ultra Long Life Snap-In Aluminum Electrolytic Capacitor	500V; 56µF to 1800µF; Life at 105°C = 5000h	Snap-In 22x25 to 35x60	
193 PUR-SI Solar		Snap-In long useful life Aluminum Electrolytic Capacitor	500V; 220µF to 560µF; Life at 105°C = 6000h	Snap-In 35x30 to 35x60	

DC-AC - SAMPLING CIRCUIT

NTC SENSOR

Product Name	Status	Description	Features	Package	Q-Level
NTCALUG01A		NTC Thermistor, Lug Sensor	4.7kohm to 100kohm at 25°C 5% tolerance; -40°C~+150°C	TH / Radial Ring-tongue Lug	
NTCALUG01T		NTC Thermistor, Lug Sensor	10kohm at 25°C; 2% tolerance; -40°C~+150°C	TH / Radial Ring-tongue Lug	
NTCLE100E3		NTC Thermistors, Radial Leaded, Standard Precision	3.3ohm to 470Kohm at 25°C ±2 tolerance; -40°C~+125°C	Radial Leaded	
NTCLE101E3...SB0		NTC Thermistors, Radial Leaded Special Accuracy	4.7Kohm to 100Kohm at 25°C; ±2.19 tolerance; -40°C~+125°C	Radial Leaded	
NTCLE201E3C9002		NTC Thermistors, Long Non-Insulated Leads	10Kohm at 25°C; ±5 tolerance; -40°C~+125°C	Radial Leaded	
NTCLE203E3		NTC Thermistors, Radial Leaded, Accuracy Line	2Kohm to 470Kohm at 25°C; ±1 tolerance; -40°C~+125°C	Radial Leaded	

VOLTAGE DIVIDER RESISTOR

Product Name	Status	Description	Features	Package	Q-Level
CRCW...C e3		Lead (Pb)-free Thick Film Rectangular Commodity Chip Resistors	50V~200V; 1ohm~10Mohm; -55°C~+155°C; ±100ppm/°C	0402~1206	
CRMV		Thick Film Chip Resistors, Medium Voltage	Up to 1415V; 150ohm~75Mohm; -55°C~+155°C; ±100ppm/°C	1206~2512	
D/CRCW-P		Lead (Pb)-Bearing Thick Film, Rectangular, Semi-Precision Chip Resistors	50V~500V; 10ohm~10Mohm -55°C~+155°C; ±50ppm/°C	0402~2512	