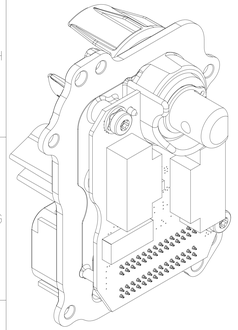
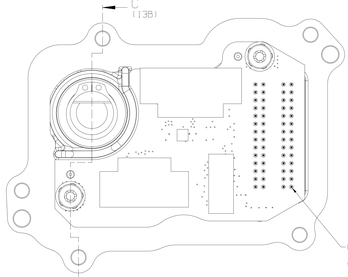
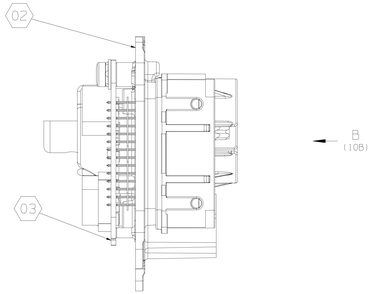
5284292

GENERAL MOTORS POWERTRAIN

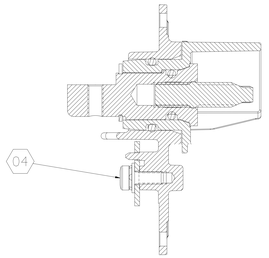


ISOMETRIC VIEW
SCALE 2:1

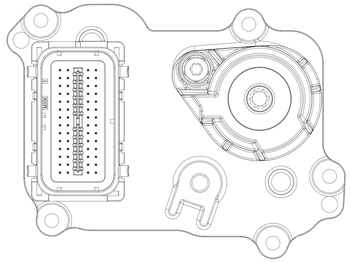




VIEW A
(11F)



SECTION C-C
(13F)



VIEW B
(8F)

GM KCDS SHALL BE ADMINISTERED IN ACCORDANCE WITH THE LATEST VERSIONS OF GMW15049 AND KCDS TEMPLATES.								
0	0	0	0	LAST NUMBER USED	KPC (KEY PRODUCT CHARACTERISTIC) PQC (PRODUCT QUALITY CHARACTERISTIC) AQC (ATTRIBUTE QUALITY CHARACTERISTIC) DR (DOCUMENTATION REQUIRED)			
0	0	0	0	TOTAL BY COLUMN				
KPC #	PQC #	AQC #	DR #	CHARACTERISTIC	RATIONALE	ZONE	SH	PLCS
KPC NO.	PQC NO.	AQC NO.	DR NO.					

ZONE	DWG STATUS DATE	ST	REV	POS	POT	REVISION HISTORY	AUTH	DR	APVD 1	APVD 2	APVD 3	APVD 4	APVD 5
	22JL16	R	001			RELEASED FOR EXPERIMENTAL AT DLS "A"	JKKTP	AD	IS	AP	MK	TT	PL
	22SE16	R	002			ITEM #02 REV LVL & DLS REVISED							
						MASS WAS 0.2959							
						RELEASED FOR EXPERIMENTAL AT DLS "B"	JPWKN	AD	IS	AP	XJ	MK	TT
		R	003			ITEM #02 REV LVL AND DLS REVISED							
						MASS WAS 0.2124							
						RELEASED FOR EXPERIMENTAL AT DLS "C"	JVRXJ	SAN					

UNLESS OTHERWISE SPECIFIED:

SOLDERING PROCESS AND CONTROL. SOLDERING PROCESSES SHALL BE AUTOMATED AND THE SUPPLIER SHALL EXCEED ACCEPTABLE CRITERIA LISTED IN IPC J-STD-001 FOR VERTICAL SOLDER FILL IN A THROUGH HOLE CONNECTION. GM REQUIRES A MINIMUM OF 95% VERTICAL FILL IN ALL THROUGH HOLE CONNECTIONS (E.G., HEADERS FOR CONNECTORS OR THROUGH HOLE COMPONENTS).

PHYSICS-OF-FAILURE ANALYSIS TO ESTIMATE THE LIFETIME OF THE PCB. THIS ANALYSIS SHALL INCLUDE AT A MINIMUM THE FOLLOWING INPUT PARAMETERS: CIRCUIT BOARD DESIGN FILES (E.G., GERBERS), PCB MATERIAL PROPERTIES, TG GLASS TEMPERATURE, SOLDER TYPE, AND COMPONENTS. THE SIMULATIONS SHALL INCLUDE AT A MINIMUM VIBRATION AND THERMAL CYCLING. THE RESULTS SHALL INCLUDE AT A MINIMUM VIA AND SOLDER JOINT LIFETIME. GM SUGGESTS DFR SHERLOCK FOR PHYSICS OF FAILURE MODELING.

PROCESS FOR INSTALLATION IN CONTROLLER ASSEMBLY LINE, INCLUDING MONITORING FOR TORQUE VALUE, REVOLUTION ANGLE, NUMBER OF FASTENERS, DRIVER POSITION, AND SCREWING SEQUENCE.

MECHANICAL ANALYSIS OF THE PRINTED CIRCUIT BOARD. THE SUPPLIER SHALL SUBMIT A TOLERANCE STACK UP ANALYSIS FOR THE MOUNTING ASSEMBLY AS WELL AS FOR EACH FASTENED JOINT. AN FEA/STRAIN ANALYSIS SHALL BE PERFORMED TO ANALYZE BOARD MOUNTING TECHNIQUES (PTH, SURFACE MOUNT (SMT) AND BOLTED JOINT).

THE SUPPLIER SHALL SUBMIT A VIBRATION ANALYSIS FOR MAXIMUM RESONANCE FREQUENCY INCLUDING MODAL ANALYSIS FOR POPULATED PCB BOARD.

SOLDER BALL FORMULATION DEFECT CONTROL PROCESS.

OPTICAL AND X-RAY INSPECTION.

PARTS MUST BE FREE FROM BURRS AND SHARP EDGES, WHICH MIGHT BE DETRIMENTAL TO SATISFACTORY ASSEMBLY, SAFE HANDLING OR FUNCTION OF PART

PARTS AS DELIVERED TO ASSEMBLY SHALL BE CLEAN AND FREE OF DEBRIS, RESIDUAL ABRASIVE MATERIAL AND CORROSION PRODUCTS ADVERSELY AFFECTING FUNCTION OR APPEARANCE

DEBRIS ON FINISHED PARTS SHALL BE REGULARLY MONITORED AND CONTROLLED USING STATISTICAL METHODS. UPPER CONTROL LIMITS AND PROCEDURES APPROVED BY GLOBAL PROPULSION SYSTEMS MATERIALS ENGINEERING AND DEFINED IN THE SUPPLIER PROCESS CONTROL PLAN PER GMW16037

PRELIMINARY DRAWING
CURRENT TO 003/0001
UNCHECKED AND UNRELEASED

HIERARCHY /QUANTITY	DWG ITM	ZONE	DWG SUB ASSY	PART NUMBER	DLS	REV LVL	PDI	CALC MASS (kg)	PART NAME	COMMENT
Z 04 14C				11548664		001			BOLT/SCREW	
1 03 10E				24284289	B	002			BOARD ASM-DRV MOT PWR INV MDL CONN CIRC	
1 02 10F				24284638	C	003			PLATE ASM-DRV MOT PWR INV MDL CONN	
A 01			RD	24284292	C	003		0.2109	PLATE ASM-DRV MOT PWR INV MDL CONN	

PARTS SHOWN ON DRAWING

FRAME NUMBER	SHEET NUMBER	DRAWING NUMBER	DWG STATUS ST	REV	PDI
2 OF 2	1 OF 1	24284292	R	003	

VIEWS AND SECTIONS ON THIS DRAWING ARE IN ACCORDANCE WITH GMPT S1100-2
RESTRICTED AND REPORTABLE SUBSTANCES FOR PARTS PER GMW3059
THIS DOCUMENT IS IN ACCORDANCE WITH ASME Y14.5-2009 AS AMENDED BY THE GM GLOBAL DIMENSIONING AND TOLERANCING ADDENDUM-2013 (GMW15812).

CHANGE RESTRICTED NO MANUAL CHANGES
FOR FURTHER DRAFTING STANDARDS SEE GMPT S1100
METRIC
DIMENSIONS SHOWN IN MILLIMETERS UNLESS OTHERWISE SPECIFIED

REFERENCE	556		DATE
DRAFTER	AMIT DHIMAN		16MY16
APVD1	IOAN SUCIU		21JL16
APVD2	AJAY PATWARDHAN		20JL16
APVD3	MARK KORICH		21JL16
APVD4	TONY TATA		20JL16
APVD5	PENG LU		21JL16

DRAWING NAME: PLATE ASM-DRV MOT PWR INV MDL CONN

FRAME NUMBER	SIZE	DRAWING NUMBER	DWG STATUS ST	REV	PDI	SHEET NUMBER
1 OF 2	R	24284292	R	003		1 OF 1