

REV.
C

SAE AS27649

FEDERAL SUPPLY CLASS
3110

RATIONALE

IN ORDER TO BRING THE AS27649 DOCUMENT UP TO DATE WITH ALL THE REFERENCE DOCUMENTS, REVISION WAS CREATED. THE CHANGES MADE WERE EDITORIAL AND TO MAKE THE FORMAT THE SAME AS SIMILAR DOCUMENTS WITHIN THE WORKING GROUP. THE ADDITION OF SPECIFYING TYPE I FOR MIL-PRF-23827 GREASE. SEAL MATERIAL POLYTETRAFLUOROETHYLENE SHEET PER AMS3666 WAS REMOVED.

NOTICE

UNDER DEPARTMENT OF DEFENSE POLICIES AND PROCEDURES, ANY QUALIFICATION REQUIREMENTS AND ASSOCIATED QUALIFIED PRODUCTS LIST ARE MANDATORY FOR DOD CONTRACTS. ANY REQUIREMENT RELATING TO QUALIFIED PRODUCTS LISTS / DATABASES (QPL/QPD'S) HAS NOT BEEN ADOPTED BY SAE AND IS NOT PART OF THIS TECHNICAL REPORT.

THE REQUIREMENTS FOR PROCURING THE PRODUCT DESCRIBED HEREIN SHALL CONSIST OF THIS SPECIFICATION SHEET AND THE LATEST ISSUE: SAE AS7949.

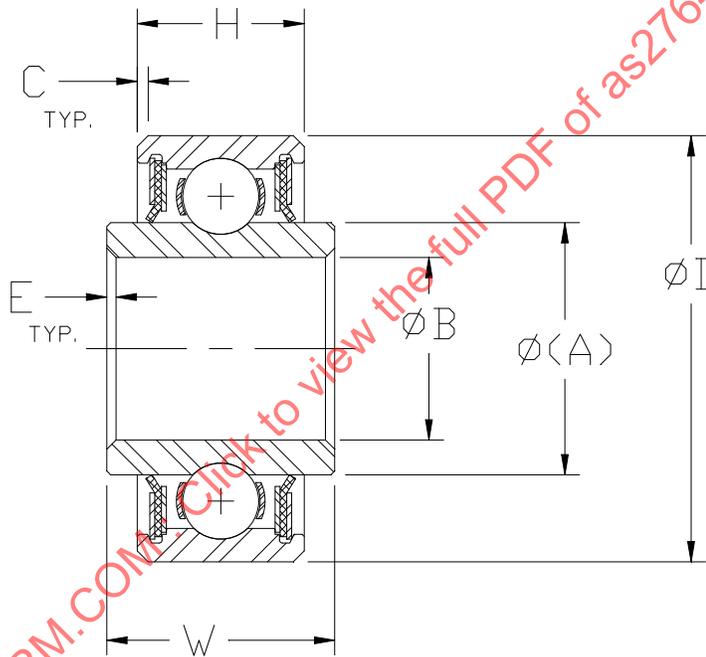


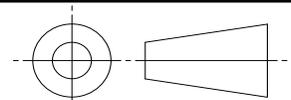
FIGURE 1 - PART CONFIGURATION

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THIRD ANGLE PROJECTION



CUSTODIAN: AIRFRAME CONTROL BEARINGS GROUP

PROCUREMENT SPECIFICATION: AS7949

SAE Aerospace
An SAE International Group

AEROSPACE STANDARD

BEARING, BALL, AIRFRAME,
ANTIFRICTION, INTERMEDIATE DUTY

SAE AS27649
SHEET 1 OF 3

REV. C

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ISSUED 1998-04 REVISED 2012-07

TABLE 1 - DIMENSIONS AND LOADS

MS DASH NO.	øB BORE +.0000 -.0005 1/	øD OUTSIDE DIAMETER +.0000 -.0005 1/	W		H		E 3/ CORNER CHAMFER X 45° INNER RING BORE +.015 -.000	C 2/ OUTER RING OD +.015 -.000	RADIAL LIMIT LOAD RATING LB	THRUST LIMIT LOAD RATING LB	4/ RADIAL LOAD RATING (LB) FOR AVERAGE LIFE OF 10 000 COMPLETE 90° CYCLES		WEIGHT POUNDS (APPROX)
			WIDTH INNER RING	WIDTH OUTER RING	SHOULDER DIAMETER INNER RING (APPROX)	SHOULDER DIAMETER OUTER RING (APPROX)					CASE I	CASE II	
			.4060 .312	.312 .415	.317	.415							
-3	.1900	.6250	.4060	.312	.317	.005	.016	750	350	750	620	.018	
-4	.2500	.7500	.4380	.312	.415	.005	.016	880	410	840	720	.028	
-5	.3125	.8125	.4690	.344	.462	.015	.016	1370	640	1230	1030	.033	
-6	.3750	.8750	.4690	.344	.520	.015	.016	1370	640	1250	1070	.034	
-8	.5000	1.1250	.5620	.438	.681	.015	.016	2250	1050	1840	1610	.075	
-10	.6250	1.3750	.5940	.469	.848	.015	.032	3060	1430	2440	2140	.119	
-12	.7500	1.6250	.6560	.531	1.052	.015	.032	4000	1870	3120	2760	.189	
-16	1.0000	2.0000	.6880	.562	1.334	.015	.032	5000	2340	3370	3060	.296	
-20	1.2500	2.2500	.6880	.562	1.615	.015	.032	6000	2800	3560	3270	.355	

1/ OUT-OF-ROUND TOLERANCES: BORE: +.0002, -.0007; OUTER DIA: +.0005, -.0010.

2/ A RADIUS GIVING APPROXIMATELY THE SAME GRIP FOR STAKING THE BEARING IN THE HOUSING WILL BE ACCEPTABLE.

3/ A RADIUS GIVING APPROXIMATELY THE SAME FILLET CLEARANCE WILL BE ACCEPTABLE.

4/ CASE I - LOAD FIXED WITH RESPECT TO OUTER RING.

CASE II - LOAD FIXED WITH RESPECT TO INNER RING.

5/ THESE RATINGS ARE FOR OPERATION UP TO 250 °F. FOR OPERATION UP TO 350 °F, THE RATINGS SHALL BE REDUCED BY 20%.

REQUIREMENTS:

- MATERIAL: RINGS AND BALLS: 440C CRES PER AMS5880 OR AMS5618
BALL RETAINER: ANY CORROSION RESISTANT STEEL
SEALS: POLYTETRAFLUOROETHYLENE (PTFE) PER AMS3652
SEAL RETAINERS: ANY CORROSION RESISTANT STEEL
- LUBRICANT: MIL-PRF-81322 OR MIL-PRF-23827 TYPE I. ALL BEARINGS SHALL BE PACKED WITH AN 80% MINIMUM GREASE FILL CONFORMING TO MIL-PRF-81322 UNLESS OTHERWISE SPECIFIED. IF MIL-PRF-23827 TYPE I IS REQUIRED, ADD THE LETTER "G" AFTER THE MS27649 DASH NUMBER. MIL-PRF-23827 TYPE I SHALL NOT BE USED FOR OPERATION WHERE TEMPERATURES EXCEED 250 °F.
- HARDNESS: HEAT TREAT RINGS AND BALLS TO 57-63 HRC AND STABILIZE FOR OPERATION AT 250 °F
- SURFACE ROUGHNESS: RACEWAYS AND BALL SHALL HAVE A MAXIMUM SURFACE ROUGHNESS OF 8 µm Ra PER ANSI/ASME B46.1
- FINISH: PASSIVATE RING SURFACES PER AMS2700, METHOD 2 OR ASTM A 967, CITRIC I, II OR III
- RADIAL INTERNAL CLEARANCE: .0003 TO .0009
- RADIAL ECCENTRICITY: INNER RING, .0010 MAX, OUTER RING, .0016 MAX.
- LATERAL ECCENTRICITY: INNER RING, .0010 MAX, OUTER RING, .0016 MAX.

 An SAE International Group	AEROSPACE STANDARD	 SHEET 2 OF 3	REV. C
	BEARING, BALL, AIRFRAME, ANTI-FRICTION, INTERMEDIATE DUTY		