# **Engine & Mechanical**













### MX-5 Miata at a Glance:



### **Engine Type**

167-hp†, MZR 2.0L DOHC 16-valve 4-cylinder engine with variable valve timing (VVT)



### **Convertible Options**

Choice of soft top or Power Retractable Hard Top (PRHT)



#### **Fuel Efficiency**

22/28 city/hwy — 5-speed MT‡ 21/28 city/hwy — 6-speed MT‡ 21/28 city/hwy — 6-speed AT‡



#### **Safety Features**

Standard advanced front air bags and side-impact air bags\*\*

2011 MX-5 Miata	Sport	Touring	Grand Touring	
Engine				
Engine type	MZR 2.0L	MZR 2.0L DOHC 16-valve 4-cylinder engine with VVT		
Horsepower				
- Manual transmission		167 hp @ 7000 rpm		
- Automatic transmission		158 hp @ 6700 rpm		
Torque		140 lb-ft @ 5000 rpm		
Redline				
- Manual transmission		7200 rpm		
- Automatic transmission		6700 rpm		
Displacement (cc)		1999		
Bore x stroke (mm)		87.5 x 83.1		
Compression ratio		10.8:1		
Fuel system	Electronically cor	Electronically controlled multiport fuel injection with tuned air intake		
Recommended fuel		Premium unleaded		
Valve train	Chain-driven dual ove	Chain-driven dual overhead cams, 4 valves per cylinder with variable intake valve timing (VVT)		
Ignition system	Direct coil-on-plug	Direct coil-on-plug electronic ignition with platinum-tipped spark plugs		
Engine block		Aluminum alloy		
Cylinder head		Aluminum alloy		
Crankshaft		Forged steel		
Connecting rods		Forged steel		
Emission control type (Fed/Cal)		Tier2 - BIN5 / LEV-II ULEV		
Fuel Economy				
Manual transmission (city/hwy)‡	22/28	22/28 21/28		
Automatic transmission (city/hwy)‡		21/28		
Drivetrain				

Automatic transmission         6-speed Sport with Adaptive Shift Logic and steering wheel-mounted paddle shifteres           Differential         Available torque-sensing limited-slip (renaus) transmission only)           Gear Ratios (*1)         6.MT	Туре		Rear-wheel drive (RWD)		
Shifters   Shifters   Chirachian   Available torque-sensing intried-ally (manual transmission only)	Manual transmission		5-speed with 6-speed close-ratio with		
Gener Ratios (:1)         5MT         6MT         6AT           1st         3.14         3.82         3.54           2nd         1.89         2.26         2.06           3rd         1.89         2.26         2.06           4th         1.00         1.18         1.00           5th         0.81         1.00         0.71           6th         -         0.79         0.58           Reverse         3.76         3.60         3.17           Final drive         4.10         4.10         4.10           Chassis           Frome         Auminum Power Plant Frame Particular Power Plant Particular Power Plant Frame Particular Power Plant Particular Power Plant Particular Power Plant Particular Power Plant Part	Automatic transmission	6-speed Sport with Adap			
### 1.14	Differential	Available torque-se	Available torque-sensing limited-slip (manual transmission only)		
2nd	Gear Ratios (:1)	5MT	5MT 6MT 6AT		
### 1.33	1st	3.14	3.82	3.54	
## 1.00  ##	2nd	1.89	2.26	2.06	
1,00	3rd	1.33	1.64	1.40	
### Reverse ### 3.76	4th	1.00	1.18	1.00	
Reverse   3.76   3.60   3.17	5th	0.81	1.00	0.71	
Final drive 4.10 4.10 4.10 4.10  Chassis  Frame Auminum Power Plant Frame  Brakes 4-wheel disc 1-front 1-1.4-inch vented disc with aluminum brake calipers  - Rear 11.0-inch Sold disc with aluminum brake calipers  - ABS 4-wheel, 4-channel with Electronic Brakeforce Distribution (EBD) and Brake Assist  Steering type Power assist Pydraulic Power Assist Steering (HPAS)  Overall steering ratio 15.0-1  Steering swheel turns, lock-to-lock 2.7  Turning circle diameter, curb-to-curb (ft) 30.8  Suspension 4-wheel independent  - Front Double wishbone, coll springs with stabilizer bar  - Rear Double wishbone, coll springs with stabilizer bar  - Rear Babilizer bar (front) Hollow  - Stabilizer bar (rear) Sold  - Springs Av≡ible sport-tuned coil springs  - Front strut tower brace Gas-filled, double acting; available Bilstein®  Wheel size (in) 16 x 6.5 17 x 7.0  Tirre size Spossore 16 2480 2511  - Weights & Capacities  Curb weight (tbs)  - Manual transmission 2480 2511  - Automatic transmission 2542  Weight distribution (front/rear)	6th		0.79	0.58	
Chassis Frame Aluminum Power Plant Frame Brakes 4-wheel disc 11.4-inch vented disc 11.4-inch vented disc 11.4-inch vented disc 11.0-inch solid disc with aluminum brake calipers 4-ABS 11.0-inch solid disc with aluminum brake calipers 4-wheel, 4-channel with Electronic Brakeforce Distribution (EBD) and Brake Assist Steering type Rack-and-pinion Power assist Hydraulic Power Assist Steering (HPAS) Overall steering ratio 15.0:1 Steering wheel turns, lock-to-lock 2.7 Turning circle diameter, curb-to-curb (ft) 30.8 Suspension 4-wheel independent Double wishbone, coil springs with stabilizer bar Rear Multilink with stabilizer bar Rear Multilink with stabilizer bar Front Double wishbone, coil springs with stabilizer bar Rear Multilink with stabilizer bar Stabilizer bar (rear) Solid Springs Available sport-tuned coil springs Front strut tower brace	Reverse	3.76	3.60	3.17	
Aluminum Power Plant Frame   Brakes	Final drive	4.10	4.10	4.10	
### A-wheel disc	Chassis				
Front	Frame	A	luminum Power Plant Fram	ne	
Rear	Brakes		4-wheel disc		
4-wheel, 4-channel with Electronic Brakeforce Distribution (EBD) and Brake Assist  Steering type  Rack-and-pinion  Power assist  Hydraulic Power Assist Steering (HPAS)  Overall steering ratio  15.0:1  Steering wheel turns, lock-to-lock  2.7  Turning circle diameter, curb-to-curb (ft)  30.8  Suspension  4-wheel independent  Double wishbone, coil springs with stabilizer bar  Rear  Multilink with stabilizer bar  Hollow  Stabilizer bar (front)  Stabilizer bar (front)  Springs  Available sport-tuned coil springs  Front strut tower brace  Front strut tower brace  Gas-filled, double acting; available Bilstein®  Wheel size (in)  16 x 6.5  17 x 7.0  Tire size  P205/50R16  V-speed-rated radial tires  Weights & Capacities  Curb weight (lbs)  - Manual transmission  2480  2511  - Automatic transmission  4-wheel, 4-channel with Electronic Brakeforce Distribution (EBD) and Brake Assist to the Assist the and pinion  15.0:1  15.0:1  15.0:1  15.0:1  15.0:1  15.0:1  30.8  4-wheel independent  Double wishbone, coil springs with stabilizer bar  Hollow  Solid  4-wheel independent  Blow  Hollow  Solid  Available sport-tuned coil springs  Front strut tower brace  Gas-filled, double acting; available Bilstein®  P205/45R17 W-speed-rated radial tires  Weights & Capacities  Curb weight (lbs)  - Manual transmission  2480  2511  - Automatic transmission  5242  Weight distribution (front/rear)	- Front		11.4-inch vented disc		
Assist   Steering type   Rack-and-pinion	- Rear	11.0-inch s			
Power assist	- ABS	4-wheel, 4-channel with I	4-wheel, 4-channel with Electronic Brakeforce Distribution (EBD) and Brake		
Overall steering ratio         15.0:1           Steering wheel turns, lock-to-lock         2.7           Turning circle diameter, curb-to-curb (ft)         30.8           Suspension         4-wheel independent           - Front         Double wishbone, coil springs with stabilizer bar           - Rear         Multilink with stabilizer bar           - Stabilizer bar (front)         Hollow           - Stabilizer bar (rear)         Solid           - Springs         Available sport-tuned coil springs           - Front strut tower brace         Standard           Shock absorbers         Gas-filled, double acting; available Bilstein®           Wheel size (in)         16 x 6.5         17 x 7.0           Tire size         P205/50R16 V-speed-rated radial tires         P205/45R17 W-speed-rated radial tires           Weight & Capacities           Curb weight (lbs)           - Manual transmission         2480         2511           - Automatic transmission         2542           Weight distribution (front/rear)         52/48	Steering type		Rack-and-pinion		
Steering wheel turns, lock-to-lock  Turning circle diameter, curb-to-curb (ft)  Suspension  4-wheel independent  Front  Double wishbone, coil springs with stabilizer bar  Rear  Multilink with stabilizer bar  Hollow  Stabilizer bar (front)  Solid  Springs  Available sport-tuned coil springs  Front strut tower brace  Front strut tower brace  Gas-filled, double acting; available Bilstein®  Wheel size (in)  Tire size  P205/50R16  V-speed-rated radial tires  Weights & Capacities  Curb weight (lbs)  Manual transmission  2480  2511  Automatic transmission  2542  Weight distribution (front/rear)  500  4-wheel independent  4-wheel independe	Power assist	Hydrau			
Turning circle diameter, curb-to-curb (ft)  Suspension  4-wheel independent  1-Front  Double wishbone, coil springs with stabilizer bar  Rear  Multilink with stabilizer bar  Hollow  Stabilizer bar (front)  Solid  Springs  Available sport-tuned coil springs  Front strut tower brace  Front strut tower brace  Shock absorbers  Gas-filled, double acting; available Bilstein®  Wheel size (in)  16 x 6.5  17 x 7.0  Tire size  P205/50R18  V-speed-rated radial tires  Weights & Capacities  Curb weight (lbs)  Manual transmission  2480  2512  Weight distribution (front/rear)  50.8  4-wheel independent  4	Overall steering ratio				
Suspension 4-wheel independent  Front Double wishbone, coil springs with stabilizer bar  Rear Multilink with stabilizer bar  Stabilizer bar (front) Hollow  Stabilizer bar (rear) Solid  Springs Available sport-tuned coil springs  Front strut tower brace - Standard  Shock absorbers Gas-filled, double acting; available Bilstein®  Wheel size (in) 16 x 6.5 17 x 7.0  Tire size 205/45R16  V-speed-rated radial tires  Weights & Capacities  Curb weight (lbs)  Manual transmission 2480 2511  - Automatic transmission 25/48  Weight distribution (front/rear) 52/48	Steering wheel turns, lock-to-lock				
Pront Double wishbone, coil springs with stabilizer bar Rear Multilink with stabilizer bar Stabilizer bar (front) Hollow Stabilizer bar (rear) Solid Springs Available sport-tuned coil springs Front strut tower brace Shock absorbers Gas-filled, double acting; available Bilstein® Wheel size (in) 16 x 6.5 17 x 7.0  Tire size P205/50R16 V-speed-rated radial tires  Weights & Capacities Curb weight (lbs) Manual transmission 2480 2511 Automatic transmission Automatic transmission Spouls with stabilizer bar Multilink with stabilizer bar Available sport-tuned coil springs  Solid  Available sport-tuned coil springs  Standard  St	Turning circle diameter, curb-to-curb (ft)				
Rear Multilink with stabilizer bar Stabilizer bar (front) Hollow Stabilizer bar (rear) Solid Springs Available sport-tuned coil springs Front strut tower brace Shock absorbers Gas-filled, double acting; available Bilstein® Wheel size (in) 16 x 6.5 17 x 7.0  Tire size P205/50R16 V-speed-rated radial tires  Weights & Capacities Curb weight (lbs) Manual transmission 2480 2511 Automatic transmission Available sport-tuned coil springs A	Suspension				
Rear Multilink with stabilizer bar Stabilizer bar (front) Hollow Stabilizer bar (rear) Solid Springs Available sport-tuned coil springs Front strut tower brace Shock absorbers Gas-filled, double acting; available Bilstein® Wheel size (in) 16 x 6.5 17 x 7.0  Tire size P205/50R16 V-speed-rated radial tires  Weights & Capacities Curb weight (lbs) Manual transmission 2480 2511 Automatic transmission Available sport-tuned coil springs A	- Front	Double wis	·		
Stabilizer bar (rear) Springs Available sport-tuned coil springs Front strut tower brace Shock absorbers Gas-filled, double acting; available Bilstein® Wheel size (in) 16 x 6.5 17 x 7.0  Tire size P205/50R16 V-speed-rated radial tires  Weights & Capacities Curb weight (lbs) Manual transmission 2480 2511 Automatic transmission 2542 Weight distribution (front/rear)	- Rear				
Available sport-tuned coil springs Front strut tower brace Standard Shock absorbers Gas-filled, double acting; available Bilstein® Wheel size (in) 16 x 6.5 17 x 7.0 Tire size P205/50R16 V-speed-rated radial tires Weights & Capacities Curb weight (lbs) Manual transmission 2480 2511 Automatic transmission 2542 Weight distribution (front/rear)	- Stabilizer bar (front)				
Front strut tower brace  Standard  Shock absorbers  Gas-filled, double acting; available Bilstein®  Wheel size (in)  16 x 6.5  17 x 7.0  P205/50R16 V-speed-rated radial tires  Weights & Capacities  Curb weight (lbs)  - Manual transmission  Automatic transmission  2480  2511  Standard  Standard  Standard  Standard  Standard  16 x 6.5  17 x 7.0  P205/45R17 W-speed-rated radial tires  P205/45R17 W-speed-rated radial tires  2511  - Automatic transmission  2542  Weight distribution (front/rear)	- Stabilizer bar (rear)				
Shock absorbers  Gas-filled, double acting; available Bilstein®  Wheel size (in)  16 x 6.5  17 x 7.0  Tire size  P205/50R16 V-speed-rated radial tires  Weights & Capacities  Curb weight (lbs)  - Manual transmission  2480  2511  - Automatic transmission  2542  Weight distribution (front/rear)	- Springs	Ava			
Wheel size (in)  16 x 6.5  17 x 7.0  P205/50R16 V-speed-rated radial tires  Weights & Capacities  Curb weight (lbs)  - Manual transmission  2480  2511  - Automatic transmission  2542 Weight distribution (front/rear)	- Front strut tower brace				
Wheel size (in)  16 x 6.5  17 x 7.0  P205/50R16 V-speed-rated radial tires  Weights & Capacities  Curb weight (lbs)  - Manual transmission  2480  2511  - Automatic transmission  2542 Weight distribution (front/rear)	Shock absorbers	Gas-fille			
Tire size  P205/50R16 V-speed-rated radial tires  Weights & Capacities  Curb weight (lbs)  - Manual transmission  Automatic transmission  2480  2511  - Automatic transmission  2542  Weight distribution (front/rear)	Wheel size (in)				
Curb weight (lbs)  - Manual transmission  - Automatic transmission  Weight distribution (front/rear)  2480  2511  2542  52/48	Tire size	V-speed-rated radial	P205/45R17 W-speed-rated radial tires		
- Manual transmission 2480 2511  - Automatic transmission 2542  Weight distribution (front/rear) 52/48	Weights & Capacities				
- Automatic transmission 2542 Weight distribution (front/rear) 52/48	Curb weight (lbs)				
Weight distribution (front/rear) 52/48	- Manual transmission	2480	2480 2511		
	- Automatic transmission		2542		
Fuel capacity (gallons) 12.7	Weight distribution (front/rear)		52/48		
	Fuel capacity (gallons)		12.7		



### **Exterior**

		5 standard	option - not available
2011 MX-5 Miata	Sport	Touring	<b>Grand Touring</b>
Body			
Halogen headlights	5	5	5
Xenon High-Intensity-Discharge (HID) low-beam headlights			•
Halogen fog lights	<b>□</b> ††	5	5
Chrome grille surround		5	5
Lightweight aluminum-alloy hood and trunk lid	5	5	5
Variable-intermittent windshield wipers	5	5	5
Vinyl convertible top	5	5	
Cloth convertible top			5
Dual power side mirrors	5	5	5
Body-color door handles	5	5	5
Glass rear window with defogger	5	5	5
Rear-fender-mounted antenna	5	5	5
Dual exhaust outlets with chrome tips	S	5	5
Wheels & Tires			
16-inch aluminum-alloy wheels	5		
17-inch aluminum-alloy wheels		5	5
P205/50R16 high-performance radial tires	5		
P205/45R17 high-performance radial tires		5	5
Tire puncture repair kit (includes compressor, tire sealant, injection hose, spare valve core, valve core tool)	5	5	5
Exterior Dimensions			
Wheelbase (in)		91.7	
Track, front (in)		58.7	
Track, rear (in)		58.9	
Length (in)		157.3	
Width (in)		67.7	
Height (in)		49.0	
Minimum ground clearance, laden (in)		4.6	



### Interior

		<b>5</b> standard	option — not availa
2011 MX-5 Miata	Sport	Touring	Grand Touring
Comfort & Convenience			
Air conditioning	5	5	
Automatic climate control			5
Power windows with driver's one-touch-down feature	5	5	5
Passenger window one-touch-down feature	<b>□</b> ††	5	5
Power door locks with 2-stage unlocking	<b>□</b> ††	5	5
Cruise control with steering-wheel-mounted controls	<b>□</b> ††	5	5
Bluetooth® hands-free phone capability‡‡			•
Remote keyless entry with retractable key	<b>□</b> ††	5	5
Mazda Advanced Keyless Entry & Start System			•
Auto-dimming rearview mirror with HomeLink®		5	5
Tilt steering wheel	5	5	5
Interior illumination — dome light, ignition switch and trunk	5	5	5
Driver and passenger visor vanity mirrors	5	5	5
Retractable wind blocker	5	5	5
12-volt power outlet	5	5	5
Rear window defogger with timer	5	5	5
Storage			
Lockable glove compartment	5	5	5
Center console storage with cup holder	5	5	5
Door net pockets with bottle holders	5	5	5
Lockable rear storage	5	5	5
Driver and passenger behind-seat storage — covered	5	5	5
Driver's seatback storage pocket	5	5	5
Seating & Trim			
2-passenger seating	5	5	5
6-way adjustable driver's seat	5	5	5
4-way adjustable passenger seat	5	5	5
Heated seats			5
Cloth-trimmed seats	5	5	
Leather-trimmed seats			5
Leather-wrapped steering wheel	5	5	5
Leather-wrapped shift knob		5	5
Leather-wrapped parking brake handle			5
Silver interior accents			5
Silver seatback bar accents	<b></b> +†	5	5
Padded center console and door armrests	5	5	5
Carpet floor mats	5	5	5

Audio				
AM/FM/CD/MP3-compatible stereo with 6 speakers	5			
AM/FM/in-dash 6-disc CD/MP3-compatible changer with 6 speakers		5		
Bose® audio system with AudioPilot® 2, AWFWin-dash 6-disc CD/MP3-compatible changer and 7 speakers			5	
SIRIUS Satellite Radio-compatible audio system***	5	5	5	
SIRIUS Satellite Radio with free 6-month subscription		•	•	
Auxiliary-audio input jack	5	5	5	
Steering-wheel-mounted audio controls	<b>□</b> ††	5	5	
Instrumentation				
Speedometer, tachometer, oil pressure, coolant temperature and fuel gauge	5	5	5	
Dual trip odometers	5	5	5	
Trip computer	<b>□</b> ††	5	5	
Interior Dimensions & Capacities				
Headroom (in)	37.4			
Shoulder room (in)	53.2			
Hip room (in)		50.6		
Legroom (in)		43.1		
Cargo volume (cu ft)		5.3		



# Safety

		5 standard	option — not available	
2011 MX-5 Miata	Sport	Touring	Grand Touring	
Safety				
Advanced front air bags** with seat belt-use, passenger-weight and driver's seat-position sensors and passenger-side deactivation switch	5	5	5	
Side-impact air bags**	5	5	5	
3-point seat belts with pretensioners and force limiters	5	5	5	
Anti-lock Brake System (ABS) with Electronic Brakeforce Distribution (EBD) and Brake Assist	5	5	5	
Dynamic Stability Control (DSC)††† and Traction Control System (TCS)			•	
Side-impact door beams	5	5	5	
Collapsible steering column	5	5	5	
Security				
Engine-immobilizer antitheft system	5	5	5	
Antitheft alarm system			•	
Keyless remote panic button (on key fob)	<b>□</b> ††	5	5	
Tire-Pressure Monitoring System (TPMS)	5	5	5	
Tire puncture repair kit (includes compressor, tire sealant, injection hose, spare valve core, valve core tool)	5	5	5	





standard option not available

		<b>Standard</b>	option - not available
2011 MX-5 Miata	Sport	Touring	<b>Grand Touring</b>
Packages & Options			
Convenience Package - Fog lights - Remote keyless entry and retractable key - Power door locks - Cruise control - Steering-wheel-mounted audio and cruise controls - One-touch-down passenger window - Trip computer - Silver seatback bars	□††	<u>s</u>	5
Suspension Package - Sport-tuned suspension - Bilstein® shock absorbers - Limited-slip differential (manual transmission only)		•	<u> </u>
Premium Package  - Xenon High-Intensity-Discharge (HID) low-beam headlights  - Mazda Advanced Keyless Entry & Start System  - Bluetooth® hands-free phone capability‡‡  - SIRIUS Satellite Radio with free 6-month subscription  - Dynamic Stability Control (DSC)††† and Traction Control System (TCS)  - Antitheft alarm			0
Exterior			
Appearance Package (not available with splash guards) - Front air dam - Side sill skirts - Rear under skirt		0	0
Door edge guards	□ / <del>Π</del>	<b>0</b> / <b>A</b>	□ / 目
Chrome fuel-filler door	□ / <del> </del>	<b>0</b> / <b>A</b>	□ / <del>□</del>
Splash guards front and rear (not available with Appearance Pkg)	□ / <del> </del>	<b>0</b> / <b>A</b>	□ / <del>□</del>
Rear spoiler	□ / Ħ	□ / <del> </del>	□ / 🖪
Wheel locks	□ / <del>□</del>	<b>0</b> / <b>A</b>	□ / <del>□</del>
Interior			
Carpet Floor mats	□ / Ħ	□ / <b>用</b>	□ / 🖪
All-weather floor mats	□ / <del>□</del>	□ / <del>用</del>	□ / 目
Cargo net	□ / <del> </del>	<b>0</b> / <b>A</b>	□ / 🖪 ‡‡‡
Antitheft alarm with shock sensor	□ / □‡‡	<b>0</b> / <b>A</b>	□ / ■‡‡‡
Audio			
In-Dash 6-disc CD/MP3-compatible changer	□ / Ħ		
SIRIUS Satellite Radio with free 6-month subscription	□ / 目	<b>0</b> / <b>6</b>	□ / ■‡‡‡

<sup>† 158</sup> hp — 6-speed Sport automatic transmission.

<sup>‡</sup> EPA-estimated mileage. Actual results may vary.

<sup>\*\*</sup> Always wear your seat belt and deactivate passenger-side air bag when using a child- or infant-safety seat.

<sup>††</sup> Requires Convenience Package on MX-5 Sport with 5-speed manual transmission. Standard on MX-5 Sport with 6-speed Sport automatic transmission.

<sup>‡‡</sup> The Bluetooth® system functions only with select manufactured devices. Please consult www.MazdaUSA.com/bluetooth for device compatibility.

\*\*\* SIRIUS Satellite Radio-compatible audio system requires additional dealer-installed hardware and subscription.

††† Dynamic Stability Control (DSC) is an electronic system to help the driver maintain control under adverse conditions. It is not a substitute for safe driving practices. Factors including speed, road conditions and driver steering input can all affect whether DSC will be effective in preventing loss of control. Please see the Owner's Manual for further details.

‡‡‡ Not available with Premium Package.