

Transistor

Transistor Part Number Information

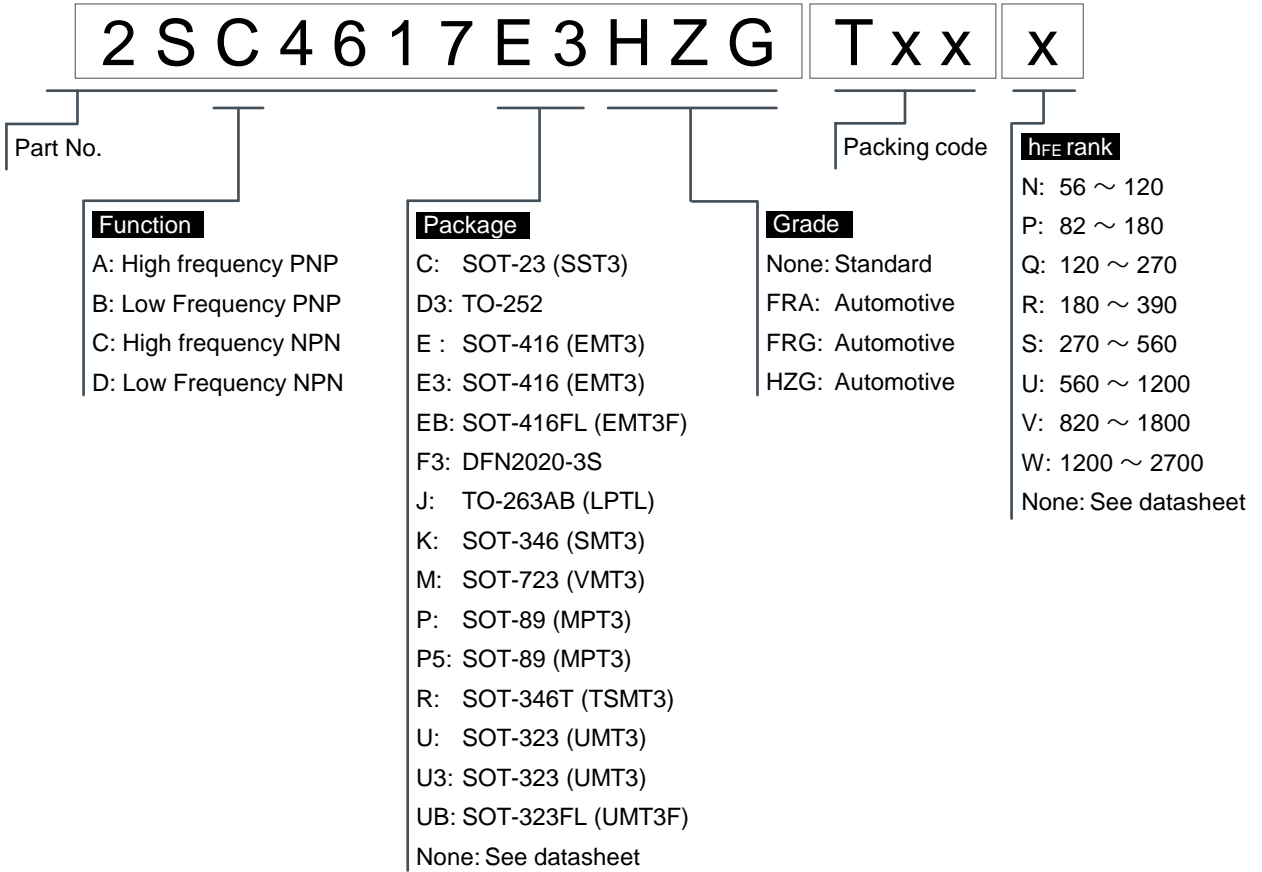
This application note provides typical part number information for the transistor product family.

Transistor

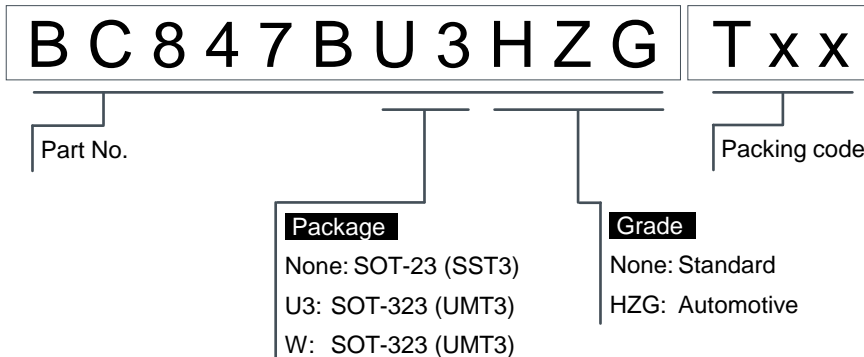
1. [Bipolar Transistors](#)
2. [Digital Transistors](#)
3. [Darlington Transistors](#)
4. [Complex Transistors](#)
5. [MOSFET](#)
6. [Packing Code](#)

1. Bipolar Transistors (1)

2SAxxxx, 2SBxxx, 2SCxxxx, 2SDxxxx

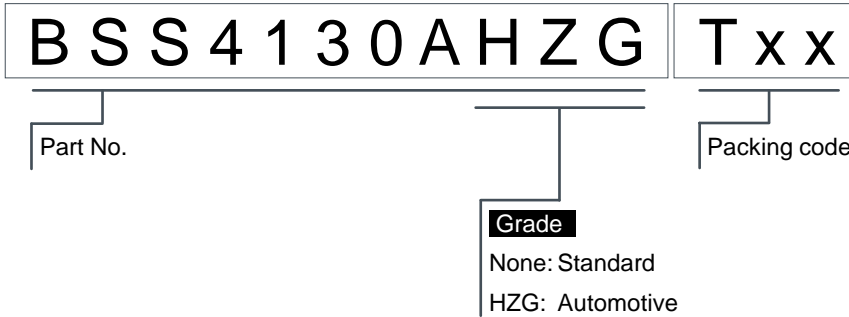


BCxxxxx, BCXxx

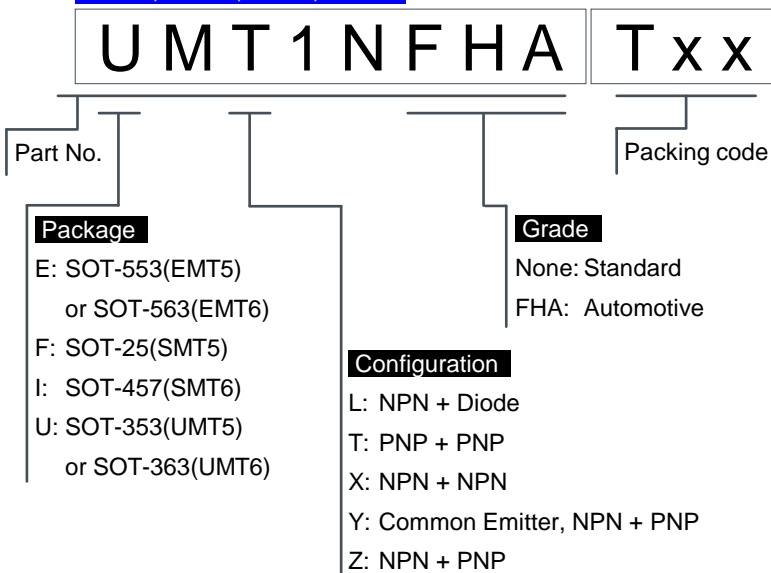


1. Bipolar Transistors (2)

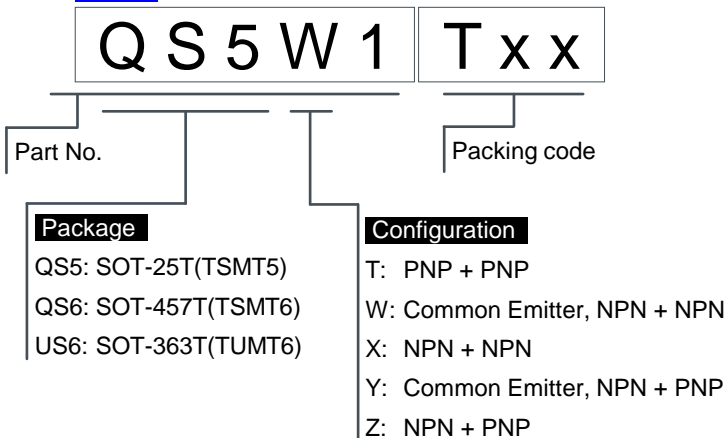
BSSxxx



EMxxx, FMxxx, IMxxx, UMxxx



QSxxx



1. Bipolar Transistors (3)

QSxx



Configuration

- T: PNP or Dual PNP
- X: NPN or Dual NPN
- Z: Common Emitter, NPN + PNP

UMxxxx



Grade

- None: Standard
- HZG: Automotive

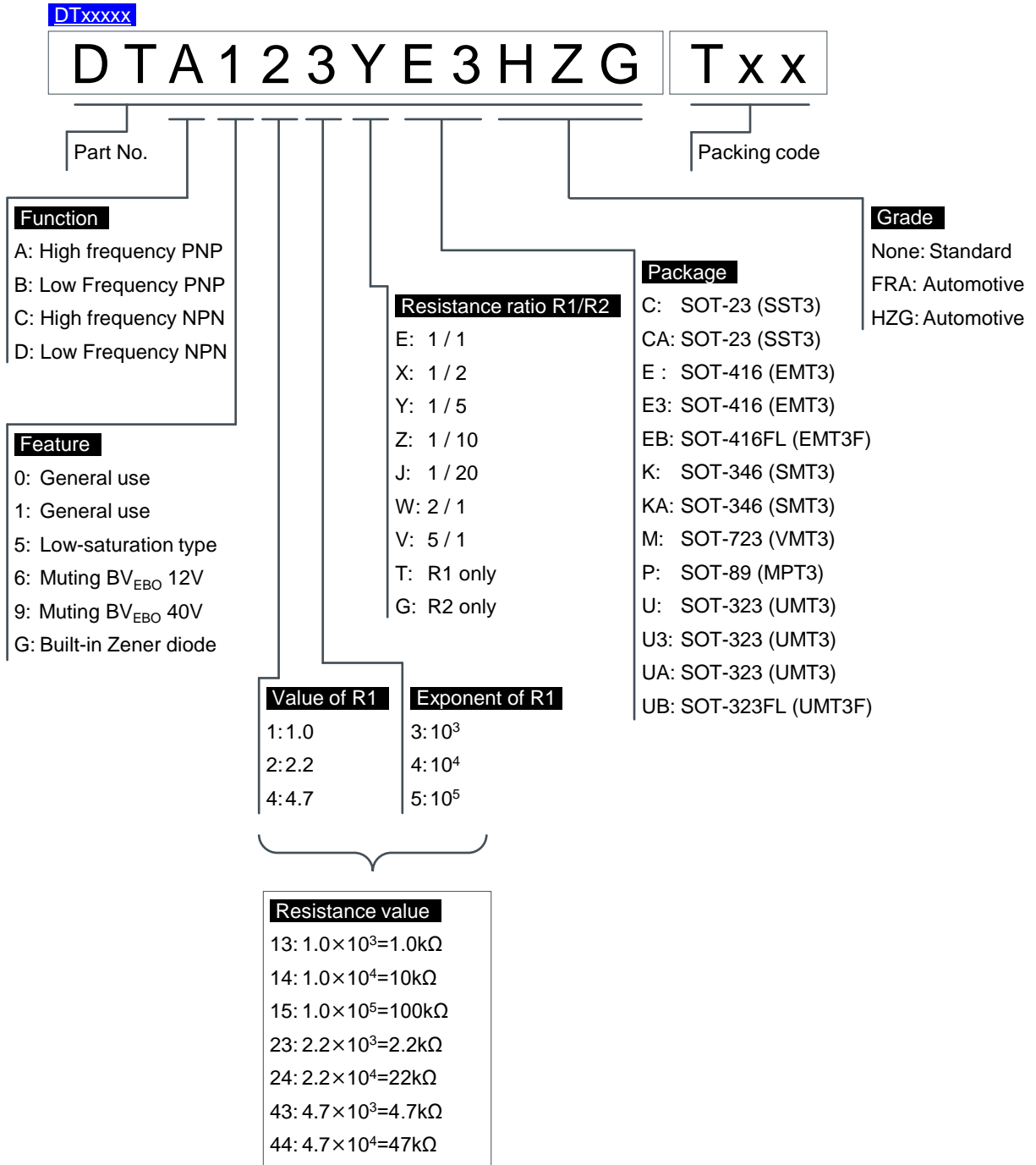
UMTxxxx



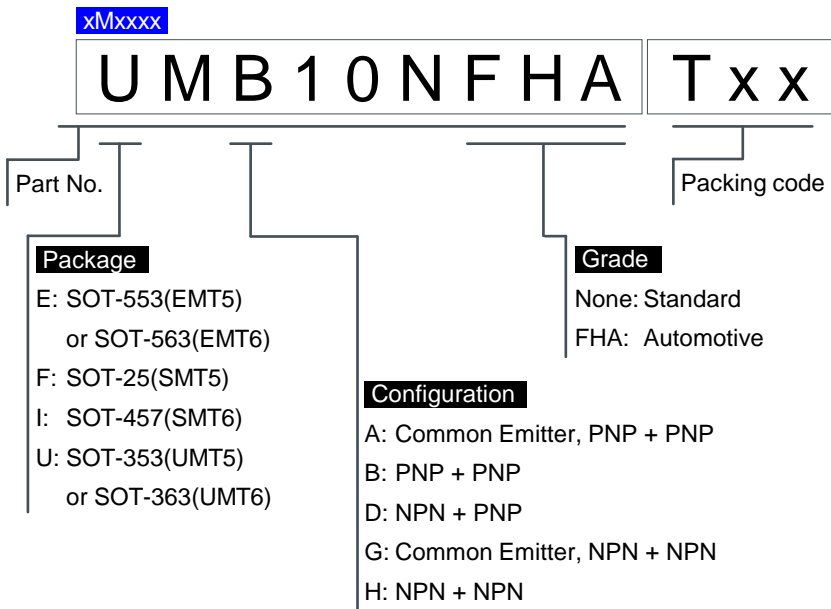
Grade

- None: Standard
- HZG: Automotive

2. Digital Transistors (1)

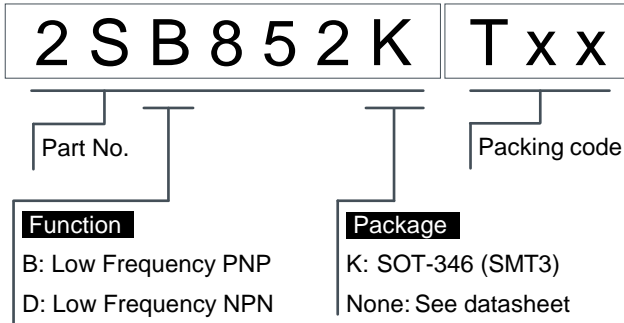


2. Digital Transistors (2)

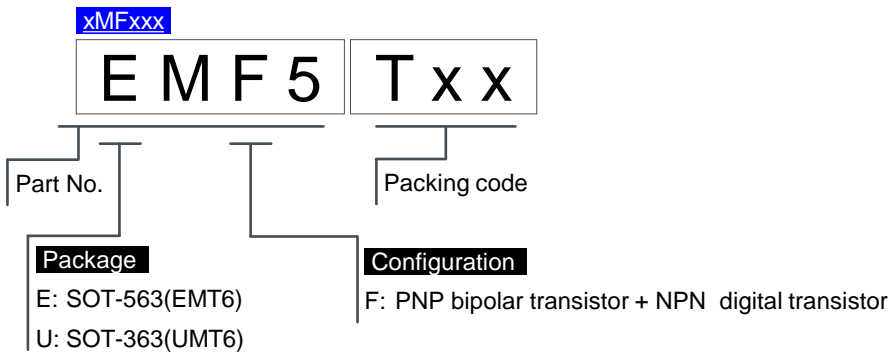


3. Darlington Transistors

2SBxxxx, 2SDxxxx

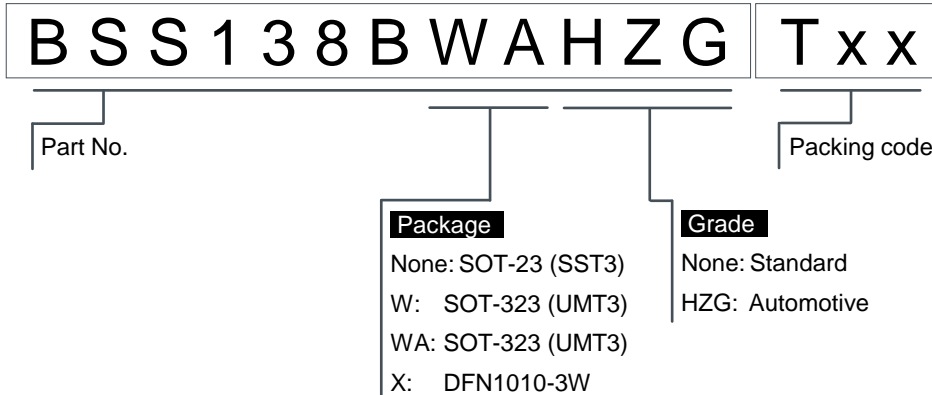


4. Complex Transistors

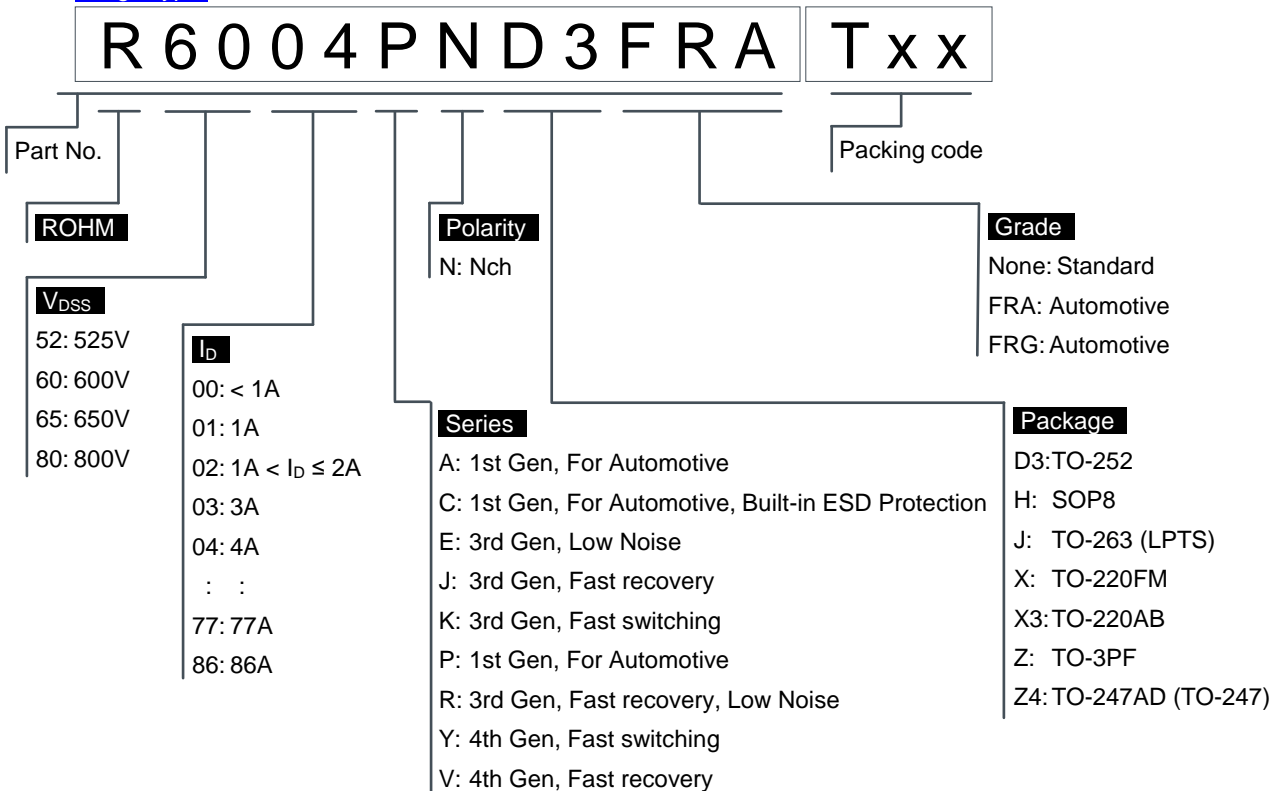


5. MOSFET (1)

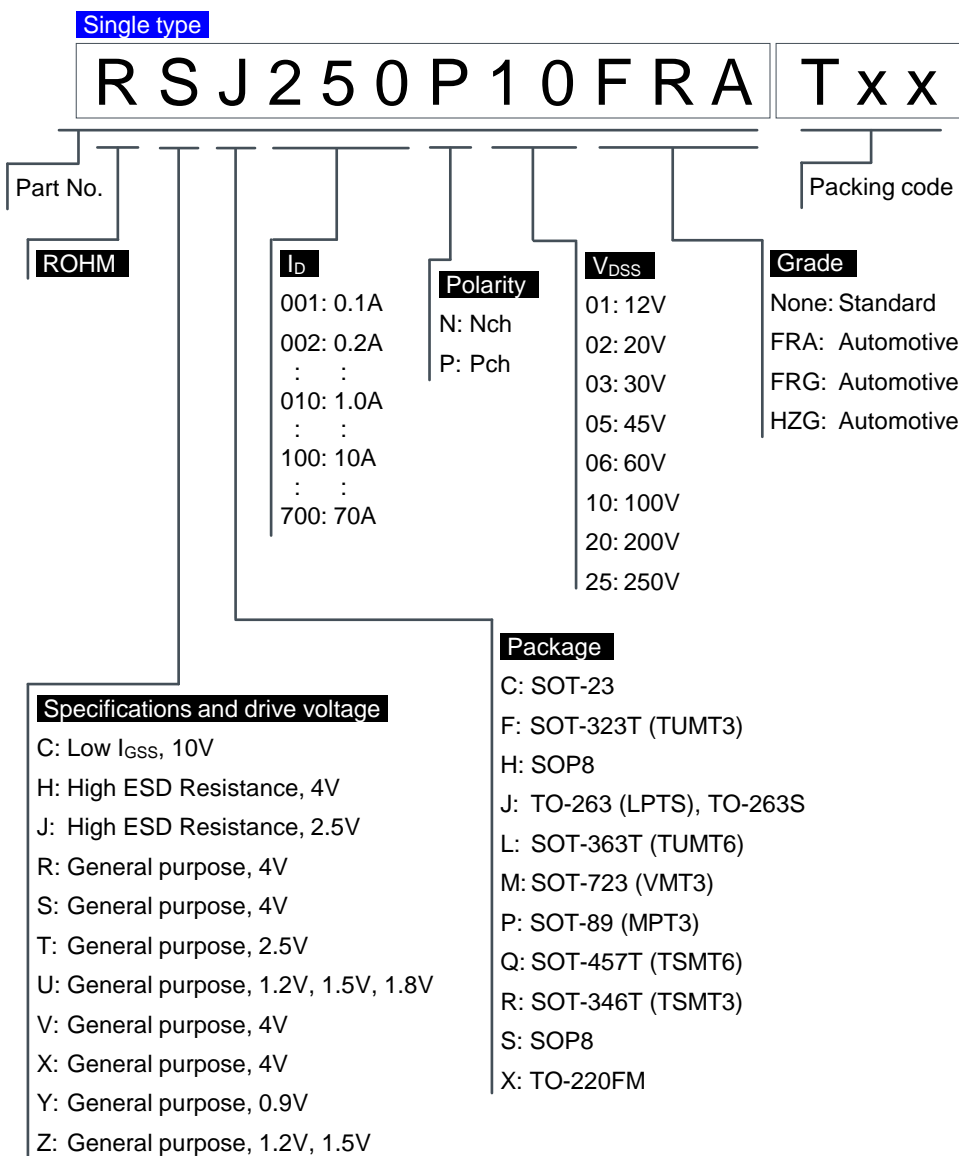
Single type



Single type



5. MOSFET (2)



5. MOSFET (3)

Single type

R D 3 H 0 4 5 S P F R A T x x

Part No.

Packing code

ROHM

I_D

Grade

- 001: 0.1A
- 002: 0.2A
- : :
- 010: 1.0A
- : :
- 100: 10A
- : :
- 250: 25A
- 01B: 10A
- 02B: 20A
- 03B: 35A
- 05B: 50A
- 07B: 70A
- 10B: 105A
- 12B: 120A
- 18B: 180A

- None: Standard
- FRA: Automotive
- HZG: Automotive

Specifications and drive voltage

Sym bol	Process	Polarity	Drive voltage	Comment
YN	1st Gen	Nch	0.9V	
UN	1st Gen	Nch	1.2V, 1.5V	
AA	1st Gen	Nch	10V	For Automotive
CN	1st Gen	Nch	10V	
SN	1st Gen	Nch	2.5V, 4.0V	
BE	3rd Gen	Nch	10V	
MN	3rd Gen	Nch	4.5V	High Performance
BD	3rd Gen	Nch	6.0V	
AD	4th Gen	Nch	4.5V	Built-in ESD Protection
BN	4th Gen	Nch	4.5V	
GN	4th Gen	Nch	4.5V	High Performance
AJ	5th Gen	Nch	2.5V	
BG	6th Gen	Nch	4.5V	
BH	6th Gen	Nch	6.0V, 10V	
SP	1st Gen	Pch	2.5V, 4.0V	
ZP	2nd Gen	Pch	1.2V, 1.5V	
RP	2nd Gen	Pch	4.0V	
AP	4th Gen	Pch	1.5V	
BC	5th Gen	Pch	1.8V	
AT	5th Gen	Pch	4.5V, 6.0V	
LD	CSP	Nch	2.5V	

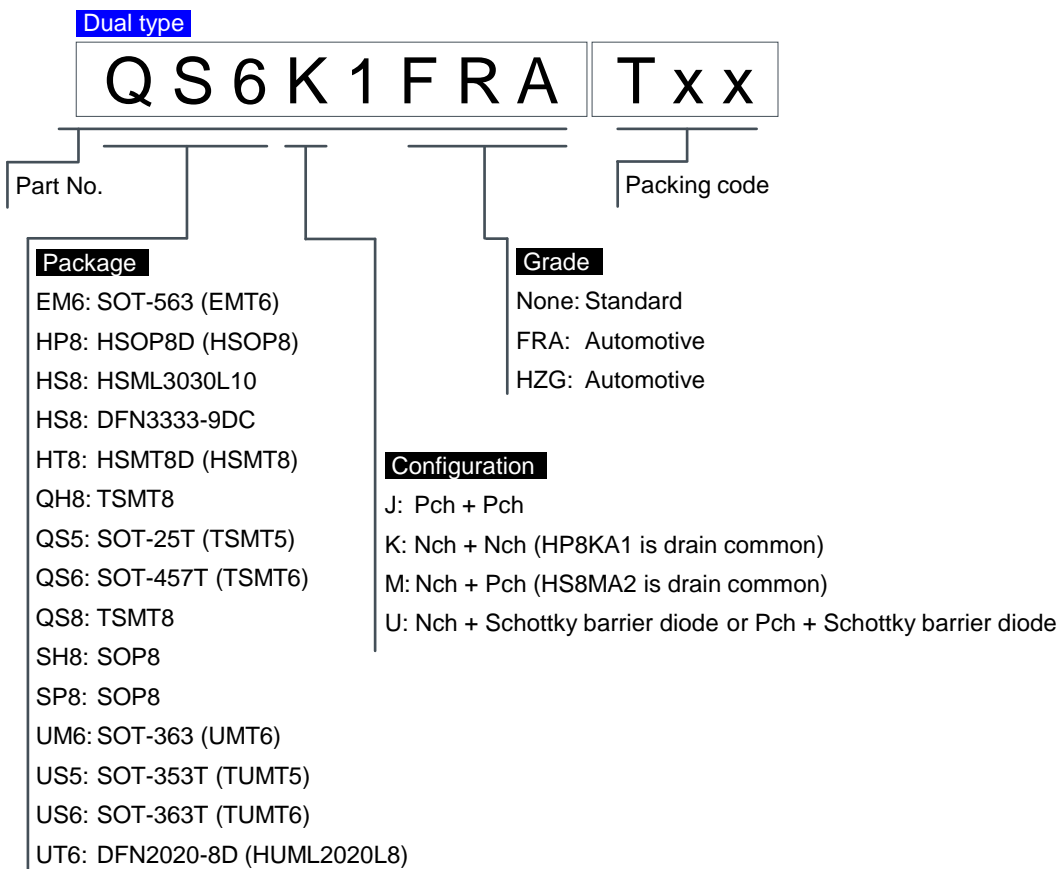
Package

- A1: DSN1006-3 (SMM1006)
- D3: TO-252
- E1: SOT416FL (EMF3F)
- F4: DFN2020-8S (HUML2020L8)
- F5: SOT-323T (TUMT3)
- F6: SOT-363T (TUMT6)
- H6: HSMT8
- J1: TO-263AB (LPTL)
- Q1: HSMT8
- Q3: HSMT8
- Q5: SOT-346T (TSMT3)
- Q6: SOT-457T (TSMT6)
- Q7: HSMT8
- S1: HSOP8S (HSOP8)
- S3: SOP8
- S6: HSOP8S (HSOP8)
- U1: SOT-323FL (UMT3F)
- V1: DFN0806-3 (VML0806)
- V2: DFN1006-3 (VML1006)
- V3: DFN0604-3 (VML0604)
- V4: DFN1616-6W
- V5: DFN1616-6
- V8: DFN1010-3W
- W4: DFN1616-7T (HEML1616L7)
- X3: TO-220AB

V_{DSS}

- A: 12V
- C: 20V
- E: 30V
- G: 40V
- H: 45V
- J: 50V
- L: 60V
- P: 100V
- R: 150V
- S: 190V
- T: 200V
- U: 250V

5. MOSFET (4)



6. Packing Code

	Package	Packing Code	ROHM Package	JEITA code
Surface Mount type	〈DFN0604-3〉	T2L, T2CL	VML0604	—
	〈DFN0806-3〉	T2L, T2CL	VML0806	—
	〈DFN1006-3〉	T2L, T2CL	VML1006	SC-101
	〈DSN1006-3〉	T5CL	SMM1006	—
	SOT-723	T2L, T2CL	VMT3	SC-105AA
	SOT-416FL	TL, TCL	EMT3F	SC-89
	SOT-416	TL, TCL	EMT3	SC-75A
	SOT-553	T2R, T2CR	EMT5	SC-107BB
	SOT-563	T2R, T2CR	EMT6	SC-107C
	SOT-323FL	TL, TCL	UMT3F	SC-85
	SOT-323	T106, T306	UMT3	SC-70
	SOT-353	TR, TCR	UMT5	SC-88A
	SOT-363	TR, TCR	UMT6	SC-88
		TN, TCN		
	SOT-323T	TL, TCL	TUMT3	SC-113A
	SOT-353T	TR, TCR	TUMT5	SC-113CA
	SOT-363T	TR, TCR	TUMT6	SC-113DA
	SOT-23	T116, T316	SST3	SOT-23
	SOT-346	T146	SMT3	SC-59
	SOT-25	T148	SMT5	SC-74A
		T108		
	SOT-457	T110	SMT6	SC-74
	SOT-346T	TL, TCL	TSMT3	SC-96
	SOT-25T	TR, TCR	TSMT5	SC-95
	SOT-457T	TR, TCR	TSMT6	SC-95
	(TSMT8)	TR, TCR	TSMT8	—
	DFN1010-3	G2CR	—	—
	DFN1010-3W	G2CR	—	—
	DFN1212-3	TCR1	—	—
	DFN1616-6	TCR1	—	—
	DFN1616-6W	TCR1	—	—
	〈DFN1616-7T〉	TCL1	HEML1616L7	—
	〈DFN2020-3S〉	TR, TCR	HUML2020L3	—
	〈DFN2020-8〉	TR, TCR, TR1	HUML2020L8	—
	(HSML3030L10)	TB	HSML3030L10	—
	〈DFN3333-9DC〉	TCR1	HSML3333L9	—
	(HSMT8)	TB, TB1	HSMT8	—
	SOT-89	T100	MPT3	SC-62
	(SOP8)	TB, TB1	SOP8	—
	(HSOP8)	TB, TB1	HSOP8	SC-111BB
	(SOT-223)	TL1	SOT-223	—
	TO-252	TL, TL1	TO-252	SC-63
TO-263S	TL	LPTS	SC-83	
TO-263AB	TLL	LPTL	—	
	TL1	TO-263AB-3LSHYAD		
Leaded type	〈TO-220FP〉	—	TO-220FM	—
		C7 G		
	TO-220AB	C16	TO-220AB	SC-46
	(TO-3PF)	C17	TO-3PF	—
	TO-247AD	C13	TO-247	—
C11		TO-247N		

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